Amateur Radio

Volume 79
Number 10
October 2011
Price: $7 incl GST
www.wia.org.au

WIRELESS INSTITUTE OF AUSTRALIA

Strong activity for the ILLW

A simple SDR radio pt 2

Short unloaded whips

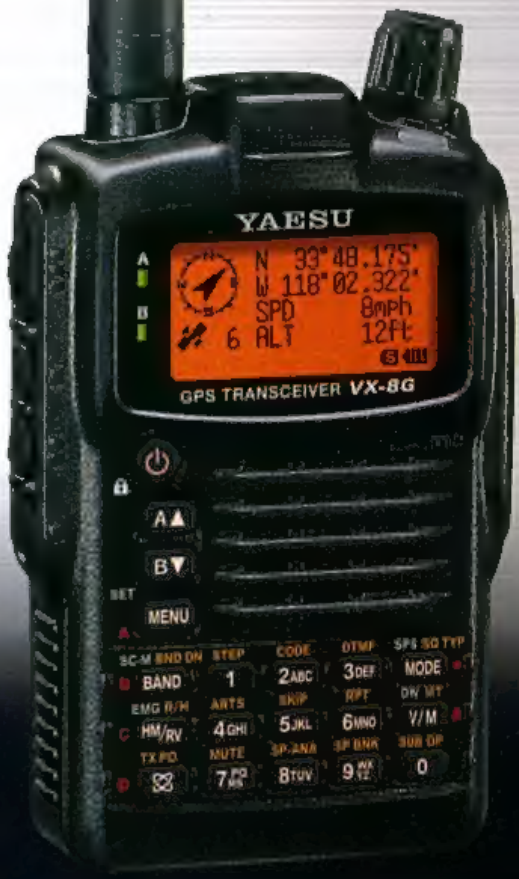
JOTA-JOTI 2011 - almost here

ISSN 0002-6859
10
9 770002 685109

YAESU

A TECHNOLOGY BREAKTHROUGH

THE NEW PRESTIGIOUS COMPACT RADIO WITH APRS



VX-8DR/E **VX-8GR/E**

Vertex Standard (Australia) Pty Ltd
10 Wesley Court, Burwood East, Victoria 3151, Tel: **1800 356 254**
http://www.vxstd.com.au

Ballarat Hamfest
Sunday 23 October 2011

Amateur Radio

The Journal of the Wireless Institute of Australia

Volume 79
Number 10
October 2011
ISSN 0002-6859

General

This month's cover

The JOTA/JOTI event is almost upon us, scheduled for 15 and 16 October. Bob VK6POP gives some important tips for the event in his story on page 6. Our cover this month features a young Scout at the microphone being watched by another member of her Troop. From their expressions, it is clear that they are having fun using amateur radio. Photograph by Bob Bristow VK6POP. We also have a small selection of photographs from the International Lighthouse and Lightship Weekend. Read the reports inside this issue.

Technical

Columns

Editorial

All circulation matters
nationaloffice@wia.org.au

How to submit material
Secretary
AR Publications Committee
PO Box 2042
BAYSWATER VIC 3153
or *armag@wia.org.au*

Letters to Editor
Editor AR Magazine
PO Box 273
Churchill Vic 3842
or *editor@wia.org.au*

Hamads
'Hamads'
PO Box 2042
BAYSWATER VIC 3153
hamads@wia.org.au

Advertising
All enquiries to
Advertising Manager
AR Publications Committee
PO Box 2042
BAYSWATER VIC 3153
or *admanager@wia.org.au*

Registered Office
Unit 20 11-13 Havelock Road
BAYSWATER VIC 3153
Australia
Phone: 03 9729 0400
Fax: 03 9729 7325

Production Deadlines
All articles, columns, hamads and advertising booking by **first day of previous month.**

Contributions to Amateur Radio

Amateur Radio is a forum for WIA members' amateur radio experiments, experiences, opinions and news. Manuscripts with drawings and/or photos are welcome and will be considered for publication. Articles attached to email are especially welcome. The WIA cannot be responsible for loss or damage to any material. Information on house style is available from the Editor.

Back issues
Back issues are available directly from the WIA National Office (until stocks are exhausted), at $8.00 each (including postage within Australia) to members.

Photostat copies
If back issues are unavailable, photocopies of articles are available to members at $2.50 each (plus an additional $2 for each additional issue in which the article appears).

Disclaimer
The opinions expressed in this publication do not necessarily reflect the official view of the WIA and the WIA cannot be held responsible for incorrect information published.

Amateur Radio Service

A radiocommunication service for the purpose of self-training, intercommunication and technical investigation carried out by amateurs; that is, by duly authorised persons interested in radio technique solely with a personal aim and without pecuniary interest.

Wireless Institute of Australia

The world's oldest
National Radio Society, founded 1910.

Representing
The Australian Amateur Radio Service
Member of the International Amateur Radio Union

Registered Office of the WIA
Unit 20, 11-13 Havelock Road
Bayswater, Victoria, 3153
Tel: (03) 9729 0400 Fax (03) 9729 7325
email: *nationaloffice@wia.org.au*
http://www.wia.org.au

All mail to
PO Box 2042 BAYSWATER VIC 3153
Business hours: 10am – 4pm weekdays

National Office staff

Manager	Mal Brooks	VK3FDSL
Administration Officer	Margaret Williams	
Examination Officer	Dianne Ashton	VK3FDIZ

Board of Directors

President	Michael Owen	VK3KI
Vice-President	Phil Wait	VK2ASD
Directors	Philip Adams	VK3JNI
	Bob Bristow	VK6POP
	Ewan McLeod	VK4ERM
	Chris Platt	VK5CP
	Trent Sampson	VK4TI
Secretary	Sarah Thompson	VK3AUD
Treasurer	John Longayroux	VK3PZ

Coordinators

AMSAT	Paul Paradigm	VK2TXT
ARDF	Jack Bramham	VK3WWW
Australian ARISS	Tony Hutchison	VK5ZAI
Awards	Chris Platt	VK5CP
Clubs	Ted Thrift	VK2ARA
Contests	Craig Edwards	VK6PDX
John Moyle Field Day	Denis Johnstone	VK4AE
Editor 'AR'	Peter Freeman	VK3PF
EMC/EMR	Gilbert Hughes	VK1GH
	Keith Malcolm	VK1ZKM
Standards	Gilbert Hughes	VK1GH
	David Wardlaw	VK3ADW
	John Bishop	VK2ZDI
NTAC	John Martin	VK3KM
Historian	Peter Wolfenden	VK3RV
IARU Region 3 Liaison	Chris Platt	VK5CP
Monitoring Service	Peter Young	VK3MV
International Travel Host	John Miller	VK3DJM
ITU Conference & Study Group		
	David Wardlaw	VK3ADW
	Keith Malcolm	VK1ZKM
	Brett Dawson	VK2CBD
	Dale Hughes	VK1DSH
QSL Curator	National Office	
Repeater	Peter Mill	VK3ZPP
Webpage	Robert Broomhead	VK3DN
Emergency Communications Group		
Coordinator	Phil Wait	VK2ASD
Members	Ewan McLeod	VK4ERM
	Peter Young	VK3MV

Editorial

Peter Freeman VK3PF

Callbook 2012

It is early September as this issue of *Amateur Radio* is prepared and Greg Williams VK3VT is currently hard at work collating the information from the many people who contribute material to the annual Callbook. Details of radio clubs around the country will have been collected, together with the latest known information about beacons and repeaters. All the other information will have been checked and updated. And all of this work is undertaken by volunteers, each making his/her contribution to benefit us all.

The snapshot of the ACMA database will have been ordered and forwarded to the production house for conversion into the printed version contained in the Callbook. This means that any changes in the database after the date the database was sampled will not appear in the 2012 Callbook. This is always the case when any printed item is prepared – there must be a cut-off date. Of course, if you need to check on the status of a callsign, the ACMA database can always be accessed on-line via the ACMA web site.

The Publications Committee and the WIA office aim to have the Callbook completed and delivered by early October. This issue of *Amateur Radio* will contain an advertisement inviting individuals and clubs to place their orders in advance. The Bookshop will then process and send the orders as quickly as possible after the Callbooks are delivered.

ILLW

Several clubs have been very prompt in submitting reports on their activities over the International Lighthouse and Lightship Weekend (ILLW). The activity was held on the third full weekend in August, so there was only a short period between the weekend and our production deadline.

The ILLW is not a contest; rather it is an activity weekend.

The event is gaining popularity, with many accepting the challenge of activating lighthouses that present logistical challenges. An example of this can be found in the report on the activation of the Sandy Cape lighthouse on Fraser Island by the VI4FI team. Personally, I found their account an entertaining read – I hope that you agree. The official ILLW website (*http://illw.net/*) shows the 2011 event had 66 lighthouses activated around Australia, with a total of 470 entries across 55 countries.

Given the coverage of the event in this issue, I would expect few additional reports to be published this year. However, I may try to fit in another report early next year, if only to stimulate amateurs to consider planning for next year's event, scheduled for 18 and 19 August 2012.

JOTA/JOTI

Bob Bristow VK6POP reminds us that the Jamboree On The Air - Jamboree On The Internet (JOTA/JOTI) event is fast approaching. Hopefully many individuals and clubs will be assisting Scout and or Guide groups locally with the provision of operators and equipment for this weekend. JOTA/JOTI provides an excellent opportunity to showcase our hobby to young people. Hopefully propagation will be kind over the weekend and allow contacts far and wide.

Whilst supervising amateurs involved attempt to maintain operational standards at all times, other operators and listeners may need to display a little tolerance if procedures are not always "spot on".

Most amateurs involved will already have their plans almost complete by now. However, there may be scope for you to assist, especially if your local club is involved. Read Bob's article to find out more about the event.

Cheers,

Peter VK3PF

WIA comment

Michael Owen VK3KI

The Wireless Institute of Australia Foundation

Over the years I have had quite a number of conversations with people who were thinking about making a gift to the WIA, either directly or from their estate.

I recall one such discussion where the donor's desire could not be achieved simply because the costs of administration associated with creating a special trust to achieve the objective would have cost most of what was to be given.

Other persons who were considering leaving a bequest to the WIA were concerned that a change of WIA Board direction could result in their bequest being expended in a manner contrary to the intentions of the donor. Donors wanted confidence that their wishes would be respected on an on-going basis.

Gifts for a defined purpose may create their own problems. Take a bequest to fund research into solving a particular medical problem. What do you do with the funds for that purpose when the problem is fully solved by someone else?

The Board of the WIA has given considerable thought to these issues and for some time have been working on the creation of a legal entity which is capable of receiving donations and/or bequests, is capable of applying them in the intended manner (or as a default in a manner which furthers amateur radio) and is administered in a professional and consistent manner, so that donors can be confident that their contributions are managed carefully.

The Board has sought the advice of a leading firm of independent lawyers.

We now announce the creation of the Wireless Institute of Australia Foundation.

The principal objects of the Foundation as expressed in its Constitution are:

(a) to promote, advance, preserve and represent in any way amateur radio (where amateur radio includes activities by duly authorised persons interested in radio technique solely with a personal aim and without pecuniary interest) and all other branches of knowledge and activity having application to amateur radio;

(b) to apply the proceeds of any gift or bequest made to the Company for the purposes set out in clause 2.1(a), in compliance with any terms and conditions stipulated by a donor but, in the absence of any stipulated terms and conditions by a donor or, if the donor's stipulated terms and conditions are inconsistent with the purposes set out in clause 2.1(a), in any manner which the Board considers appropriate to achieve the objects of the Company set out in clause 2.1(a); and

(c) to administer one or more funds into which all gifts, contributions, donations and bequests to the Company for the purposes of the Company will be credited.

The reference to the "Board" is a reference to the Board of the Foundation, not the Board of the WIA. In effect, the Board of the Foundation act in respect of gifts as trustees.

Our object was to make the Foundation a continuing entity, set up in such a way that it would have sufficient independence from the WIA to reassure those who were concerned about the effect of short term changes in those responsible for the management of the WIA.

We have done this in three ways:

First, while the WIA is the Founder Member of the Foundation, and will appoint the first directors, there will be a second group of members and the WIA will not be able to change the Constitution of the Foundation unless the members of the second group also agree.

Second, at least half of the Foundation's Board will have to have specific qualifications. At least one member of the Board must be a lawyer, and at least one member must be an accountant or financial adviser. Not more than one member may be a radio amateur without any of those qualifications and the chair will be the President of the WIA from time to time.

Third, the term of office of the Directors of the Foundation is for five (5) years, (other than the President of the WIA as Chair of the Foundation) and so operation of the Foundation is insulated against short term changes in the WIA Board.

Initially the Board of the Foundation will consist of myself as President of the WIA, and WIA Director Chris Platt, a lawyer, WIA Treasurer John Longayroux, an accountant and former WIA Director, Peter Young as a radio amateur.

Initially gifts to the Foundation will not be tax deductible, which will not be relevant for any bequests, but the Foundation will seek to have a separate fund within the Foundation accepted as a charity and so gifts to that fund will be tax deductible.

Some of the WIA's most important activities are, in law, not charitable and so funds for these purposes cannot be a gift to a charity and therefore tax deductible.

Continued on page 5

WIA news

APT Meeting concludes in Busan

Dale Hughes VK1DSH was a member of the Australian delegation to the fifth APG2012 meeting ("APG2011-5") in the series of conference meetings organised by the Asia-Pacific Telecommunity (APT), preparing for WRC-2012, held in Busan, Korea.

Dale was nominated and supported by the WIA.

APG2011-5 concluded on Saturday 3 September 2011.

The meeting was attended by more than 370 people from 25 APT Members, Associate Members, Affiliate Members and International Organizations.

Directors Peter Lake ZL2AZ and Shizuo Endo JE1MUI participated as observers on behalf of IARU Region 3 and IARU Region 3 Secretary, Ken Yamamoto JA1CJP, was a member of the Japanese delegation.

Dale was appointed chair of the Drafting Group dealing with Agenda Item 1.23, the proposal to "consider an allocation of about 15 kHz in parts of the band 415-526.5 kHz to the amateur service on a secondary basis, taking into account the need to protect existing services."

While a number of countries supported the proposal, Iran, China and Korea opposed it.

After four Drafting Group Meetings, a Working Group Meeting and a Plenary Meeting the following draft APT position will be put to a vote of the member countries as a common position:

"At the 5th meeting of the APT preparatory group for WRC-12 members, when considering agenda item 1.23, support an allocation of about 15 kHz in parts of the band 415-526.5 kHz to the amateur service on a secondary basis, taking into account the need to protect existing services. In particular Method A (472–487 kHz) of the CPM report is supported provided that appropriate protection and regulatory provisions are in place."

For that to become a common position it must be *supported by* at least 25% of all the APT Members and *not opposed by* more than 50% of the number of Members who support it. Currently 36 countries are members of the APT, and so it requires at least 9 votes in favour.

Obviously, an APT common position will greatly assist the amateur cause.

EMCOM Network (EMCOMNET)

A new Emergency Communications Network (EMCOMNET) has recently been set up by the architects of Red Cross Emergency Communications (RECOM). The RECOM organisational and technical model adopted in 1997 has been extremely successful in its work with Red Cross, and RECOM would now like to offer the new network infrastructure to other similarly setup amateur emergency communications organisations.

The RECOM operational model relies on embedding trained amateurs within a Non-Government Organisation (NGO) or Emergency Services Organisation (ESO). The operators are expected to belong to the NGO/ESO and become familiar with its operation. In the case of RECOM, the operators actually belong to the Australian Red Cross and are considered an integral part of that organisation. In order to help facilitate the formation of more similar entities to RECOM, EMCOMNET will provide access to the existing technical infrastructure and software that RECOM now use. EMCOMNET will also provide advice to amateur groups who wish to embed trained operators into other NGO and ESOs. Access to EMCOMNET will be restricted to operators who have WIA National Emergency Communications training qualifications and who are also members of an amateur emergency communications entity embedded in an NGO or ESO. A significant personal commitment is required.

The existing EMCOMNET stations operate as HF Radio Data Gateways to the Internet. They operate 24/7/365 and are geographically separated to enhance the spatial diversity of the Network. The client/customer is able to access secure messaging, text and spreadsheets, images, emails and GPS mapped position data from the activated stations simply by viewing an internet page which can be accessed with passwords. EMCOMNET will be adding two extra strategically placed Network stations to the system during 2011, 2012. A similar network has been used by RECOM for the past 14 years and has worked flawlessly during major Australian disaster activations. The proposed enhancement of the new Network will provide greater redundancy, greater spatial diversity, and an increase in the traffic carrying capacity for when other entities join the Network.

New WIA Director

Peter Young VK3MV has resigned as a director of the WIA, wishing to reduce his commitments. However, the Board is delighted that Peter will continue to be deeply involved with the WIA's work with the ACMA and government generally.

Under the WIA Constitution, the Board is obliged to appoint a new director for the balance of a retiring director's term. The Board has appointed Trent Sampson VK4TI a director for the balance of Peter's term.

Trent was first licensed as a result of the CB boom on the 70s, as VK2NDK/VK2YHA, in Tamworth, NSW. He moved through a series of callsigns, VK2KTS, then VK2ZI until moving to Queensland in 1999 where he acquired his current callsign VK4TI. Trent is an Insurance Adviser and also a qualified Financial Planner.

 Continued from page 3

In particular, gifts to support lobbying are not charitable, and so gifts to support the WIA's participation in Australian delegations to APT and ITU meetings may not be for what is in law a charitable purpose.

The second part of the principal objects I have quoted above deals with the problem of a gift for a purpose where the purpose ceases to be relevant or meaningful. If the person making the gift uses the right language, the Foundation will be able to change the purpose so it can still support amateur radio.

We are hopeful that any donors bear that in mind in formulating the terms of their gift or bequest. Our legal advisers will provide a 'model bequest' to assist intending donors.

The WIA has benefitted greatly in the past from the generosity of some wonderful people. Andersson House and the generosity of the late Henry Andersson is sufficient evidence of that.

The Board hopes that the creation of the Wireless Institute of Australia Foundation will make it a little easier for those who wish to support amateur radio and the WIA in its important functions.

Silent Key A E 'Ed' Dyring VK2ED

Alfred Edgar Dyring was born on 9 February, 1921 in Albury, NSW. He grew up in Breadalbane, 20 km SW of Goulburn, in NSW and attended high school at St. Patrick's College, Goulburn.

By this time he had built numerous crystal sets as well as one, two and three valve receivers. He left school in 1935 to work in Crookwell as a telegram boy for the PMG. By September, 1939 he was a postman in a small country town, doing a job that suited him, because it left him time for surfing and repairing his motorbikes. When war was declared in 1939 he sent off an application to join the air force as a wireless operator. As he knew Ohm's Law and could send and receive Morse he was accepted and finally posted to Melbourne. Eventually the time came to do his Morse sending and receiving tests and he easily received his set piece at 22.5 wpm.

He married his fiancé Helen on 1 November, 1941.Their honeymoon consisted of a four day pass, because of the Melbourne Cup holiday on the Tuesday, but on return to base he was informed of his overseas posting to Malaya. He arrived in Kota Bhama at 2230 hours on 7 December, 1941. The Japanese attacked at 0130 hours on the 8th, one hour and twenty minutes before the attack on Pearl Harbour. Not long after, Ed became a prisoner of war. His time in the camps is a story that he recently committed to paper and hopefully will be told at a later time. In August, 1945 he and the other prisoners walked out of their latest camp and Ed managed to hitch a plane ride to Darwin via Borneo with his old squadron. He arrived back home before the authorities knew where he was.

After being discharged in February, 1946, it was back to work for the PMG.

He worked in Newcastle until he gained promotion as Postmaster in Yenda, NSW. In Yenda he used to send the daily metrological readings to Sydney on one of the last Morse telegraph circuits in the state. Various moves to other country towns followed, including Wyong, Gundagai, Corowa, Griffith and, finally, Gosford. Through all this, he also became deeply involved in 'Rotary'.

Ed retired about1980 and then life became very busy. He built the interior fittings of his new house, and of course his radio shack underneath, because by this time he had obtained his amateur radio licence and received his first call-sign, VK2BED. This was later to be exchanged for VK2ED when it became available.

He and Helen started touring Australia, visiting friends and relatives along the way. Sadly he lost his lifelong friend and companion when Helen passed away in January, 1993. While he always felt the loss deeply, he did not give up living his life to the fullest. There were many more trips to be done. These places included Perth many times to visit his brother-in-law, Tasmania, Hervey Bay, Cairns, Daintree, Darwin, Adelaide (for reunions) and his big one, a guided camping trip up Cape York to the top, plus a trip to Thursday Island.

Somewhere during all this he learned to fly light aircraft. He did his first area solo flight in June, 1999, at age 78 years and 5 months, and passed his General Purpose flying test in March, 2000. A few years later his health started to betray him a bit so he gave up his flying without regrets. A bit later he stopped attending meetings at night due to eyesight problems, but passed his Older Persons driving tests without too many problems and was driving down to the shops once a week right till the last. Vale Ed.

Contributed by Ed's nephew, Chris Newton VK2JCN.

JOTA-JOTI 2011

Bob Bristow VK6POP, JOTA-JOTI Coordinator, Scouts Australia

Photo 1: A young Scout on the microphone, watched by her companion.

The 54th Jamboree on the Air (JOTA) and 15th Jamboree on the Internet (JOTI) take place on the third weekend of October, Friday 14th to Sunday 16th. Although the event officially runs on Saturday and Sunday, due to time zone differences there is always activity on the Friday night and Monday morning.

The purpose of this article is to give information to amateurs who will be assisting Scouts and Guides with their JOTA-JOTI activity.

One of the first things an amateur should be doing is giving advice to Scout/Guide groups about location, current radio conditions and what help the amateur may need to erect appropriate antennas for the conditions. You also need to talk about the times of day/night that HF propagation occurs so that the activity will be open at the right times to work DX if indeed DX is being sought.

You could, for instance, set up a station utilizing a repeater, or simplex VHF or UHF for younger members who are usually happy to have a short QSO with someone on the other end of the radio, and operate HF for the older Scouts/Guides who can apply themselves to working HF. These older children would also be able to operate at later hours.

The Scout/Guide Leaders should be preparing their youth members for JOTA-JOTI; however, unfortunately, some neglect to do this. In your discussions with them, remind them about the resources available at www.international.scouts.com.au Among the resources available are templates for 'cheat sheets' that the person can use to make their QSO easier.

Your role as an amateur operator is to supervise the operation of the station and prepare/operate any other related activities you may agree to assist with. It would help if you could co-opt one or more others to help you.

There is information about JOTA-JOTI, as well as programme resources, at *www.international.scouts.com.au*

Important information for operators:

Australian voice calling frequencies:
3.650, 7.090, 7.190, 14.190, 14.290, 21.190, 28.590 and 52.160 MHz.

Calling frequencies for Slow Scan TV (SSTV):
3.630, 7.033 and 14.227 MHz.

Calling Frequencies for PSK31:
14.070 MHz.

National address broadcast

The address to Scouts and Guides by the Governor General should be broadcast at 1300 hours local time. Each State has its own arrangements about who performs the broadcast. State JOTA-JOTI coordinators are listed on the website. The address will be available for download from the website about a week before the event. Where a broadcast is not available, the address can be delivered locally using an amplified source.

I wish you all the best for JOTA-JOTI 2011. I hope you enjoy what you do, and that the coffee keeps flowing. On behalf of all Scouts and Guides, thank you for your participation.

Photo 2: The JOTA-JOTI 2011 logo.

Whyalla Amateur Radio Club at ILLW 2011

Alex Glinski VK5ALX - President, Whyalla Amateur Radio Club

The Whyalla Amateur Radio Club (WARC) station VK5BWR took to the air from Point Lowly Lighthouse over the International Lighthouse and Lightship weekend on 20/21August. Point Lowly is about a twenty minute drive from Whyalla and the decommissioned but still activated lighthouse is owned by the Whyalla City Council, who kindly gave permission for us to operate from the backup generator room some 60 metres away from the lighthouse.

Pat VK5HAE, Larry VK5HBG, Jim VK5JW and the youngest of the group Damien VK5FDSB were the first to arrive at the lighthouse. Damien, being the most athletic, was sent up the 18 metre high spiral staircase inside the tower to make fast a rope which would support one end of an OCF dipole. Pat, Larry and myself had done a reconnaissance of the site a week earlier and decided that climbing up the tower was a job for younger bones.

The OCF antenna was computer modelled a few days earlier using actual site data but something went a little wrong with the calculations. What was expected to be an average antenna height of 12 metres turned out to be closer to half the height because the generator shed was a lot higher than the bottom of the lighthouse, and a nearby flagpole not quite as high as it first looked. But a quick scan with a MiniVNA Pro showed that things were not so bad that an antenna coupler could not put right.

On powering up the radio we were greeted with strong signals on both the 40 metre and 20 metre bands. The almost complete absence of noise at the location made even the weakest signals sound like S9. What a difference to the S9+10 noise levels we have to battle with back home.

But that Murphy guy was hanging about somewhere. Good signals were coming in but nothing was coming out of Jim's IC-7000. With a dummy load we saw a few watts on CW but no amount of whistling or shouting into the microphone

Photo 1: The top part of the light with a cable hanging out a window.

and pushing buttons, the purpose of which were not particularly clear to us, would make the power meter kick. Luckily though, Larry had brought along his Kenwood TS-450 for backup and the station was up and running in no time, just in time for a good handful of lighthouse contacts before lunch.

The weather at Point Lowly was just magnificent. From our operating position near the door to our 'shack' we watched a pair of dolphins frolicking a short distance offshore and large birds catching more fish than the poor fishing enthusiasts that were trying their luck off the rocky shoreline.

Those of us who were not operating were kept busy talking to a stream of visitors who came across to see what was going on. Hopefully they went away with a better understanding of amateur radio and a condensed history of the Point Lowly light.

Larry, Pat, Jim and Damien camped at the lighthouse overnight and got an early start on Sunday morning. Without the hiccups that delayed the start of Saturday's session the group managed around 50 contacts before dismantling the station early in the afternoon.

The decision to take part was made just a few weeks before the event and it probably would not have happened if it were not for the generosity of the city council in allowing us access to the lighthouse and the generator room. It was a terrific fun weekend, and those that took part already are planning for next year.

Photo 2: Larry and Pat enjoy a chat with an interstate lighthouse.

Photo 3: The club's QSL card, specially made for the event.

VI4FI Sandy Cape Lighthouse AU0043, Fraser Island IOTA OC-142, ILLW 2011

Derek Toreaux VK4MIA, President IDRC

Photo 1: The Sandy Cape Lightstation. An aerial view of Sandy Cape Lighthouse with Cottage #1 (left) and Cottage #2 (right) our QTH for ILLW 2011.

WOW. What a weekend!

For the first time in the club's 49 year history, four members of the Ipswich & District Radio Club (IDRC) embarked on a four day mini DXpedition to Sandy Cape Lighthouse AU0043, Fraser Island OC-142.

Club members Paul VK4FPDW, Mike VK4QS, Graham VK4GRA and Derek VK4MIA departed Springfield Lakes on the Friday morning at 8:15 am for the three hour journey north to Rainbow Beach. Regular contact was made with operators both on Twitter and Facebook during the 280 km journey and we were making great time on the road with little or no hold ups on the Bruce Highway.

Upon arriving at Rainbow Beach at 11:10 am, the team refuelled themselves before boarding the Manta Ray barge to Fraser Island at approximately 12:30 pm. The weather was beautiful to say the least and the pristine waters of the Coral Sea at Inskip Point were a crystal clear green filled with fish and a few dolphins for good measure.

The barge touched down at Hook Point on the southern end of Fraser Island around 1 pm and now we were ready to travel the entire length of the Island (all 120 km of it). Upon checking with a few returning travellers it was evident that we would have to use the inland track as the southern point of Fraser was impassable due to the high tide.

After a rickety and bone shaking 30 km drive along the corrugated inland track we finally hit the white sandy beaches of Fraser Island and there was nothing between us but sea breezes and beautiful coast line. Our first stop along the way was at Eurong to make sure nothing of what was tied down had moved or shifted and it was another good opportunity to stretch the legs for about 15 minutes.

On the move again... Our next destination was Dundubara to meet up with Ranger Steve Nicol of the Queensland Parks & Wildlife Service and we had plenty of time up our sleeves to get there before our deadline of 3 pm. We crossed at Eli Creek with no issues, one of the 'tricky' spots along the east coast of the island, especially if the tide is not in your favour.

Further up the beach we came across the Maheno Shipwreck that has been a feature on the beach since its grounding in 1935 due to a cyclone (apparently) but reports vary on why she landed here at Fraser. Not many washouts were encountered along the journey north but there still were a couple that needed some precision driving in order for us to make it through safely.

After enjoying the views of the gorgeous beaches along '75 Mile Beach' as it is known, we were now at Cathedral, about 10 minutes from our rendezvous point at Dundubara.

Just prior to 3 pm (great timing once again) we met up with Ranger Steve Nicol and his good lady Robyn at Dundubara Station. It was decided by Steve that we would continue the journey north as quickly as possible as the tide was now heading out and we needed to catch low tide to travel the western beach of Fraser Island from Wathumba to Sandy Cape.

Continuing north along 75 Mile Beach, after 30 minutes we could see Indian Head approaching which would be the turning point in our journey to Sandy Cape. Instead of taking the inland access road around Indian Head we continued west of Orchid Beach along Wathumba Road for what was to be a first for our team and also Paul VK4FPDW our experienced driver who had been to the Cape many times but via the eastern beaches.

After what seemed like an eternity we arrived at the locked gate to Wathumba on the western side of Fraser Island. The journey now from this point onwards was to be an experience for all of us as this side

Photo 2: Team VI4FI overlooking the Coral Sea. Views to die for, this is the view we woke up to each day. L-R : Paul VK4FPDW, Graham VK4GRA, Mike VK4QS and Derek VK4MIA. With our major sponsor VK4ICE Communications.

of Fraser Island is closed to all traffic from our present location to Sandy Cape.

If anyone has managed to visit the western side of the island near Platypus Bay then you will know that if the tide is high we would have no-where to go, hence the reason for the 'no go zone' for all traffic. There are no inland tracks, diversions or anywhere to go should the tides not be in your favour, you would be at the mercy of the Coral Sea.

It was now 4:26 pm Friday afternoon, one hour before the expected low tide and we are making great time to reach the Lighthouse by 5 pm. As I record a couple of videos for our website, the smell of the fresh seaweed that has been dumped on the beach is overpowering but we soldier on, and to all our surprises as we reach the halfway point across Platypus Bay we are greeted by at least 10 or so whales just off shore. The team will remember the eagle that flew with us along this journey, from Wathumba until we neared the Cape. I guess even though we had our experienced guide north, we also had 'eyes in the sky' as well.

It was now 4:49 pm: The final stretch as we cornered around Rooney Point along Sandy Strait, the northern beach of Fraser Island, our destination now only 15 minutes away. We could make out the Lighthouse in the distance but it still seemed so far away as we continued along what was now Sandy Strait. Before we knew it we were at the gate to the Sandy Cape Lighthouse, at 5:05 pm.

After a short 1.7 km twisting, climbing journey up the Sandy Cape Lighthouse track we had finally reached our destination and the lighthouse was in sight. The Sandy Cape Light stands at 26 metres tall with an overall height of 116 metres above sea level.

Our location was the second cottage, closest to the Lighthouse, and after unpacking the 4WD and stocking the cupboards and fridge full of food for the next three days, we set up station in the lounge room with the Yaesu FTDX-5000 fitting perfectly on the coffee table. We then ventured back outside to set up the Butternut HF6V ground mounted vertical in the dark.

With torches glowing and what looked like miners walking around the cliff edge with their headlights on, the team quickly erected the vertical and laid out the ground radials for 20, 40 and 80 for the time being, as the other bands would have already been closed.

A quick check of the SWR showed 1.5:1 or less on all three bands so VI4FI was ready to make its first call. Of course we wanted to make sure everything was 100% and that the station would be heard, so we dialled up on 14.215 and worked John ZL2JBR for a brief radio check before he headed off for the night and it seemed that everything was GO!

At 1133 Z VI4FI made its first call on 14.260 with a quick response from Jesse K4MSS from South Carolina and received a 55 report to the east coast of the USA. We talked with Jesse for a few minutes so others would find us on the band and once we said our goodbyes to Jesse and let the button go we knew we were in for a wild ride.

After making a quick decision to work split due to the QRM, the contacts came thick and fast from North America and Japan. As internet coverage was limited Paul VK4FPDW managed to see the spots on the cluster from the Europeans that we could not hear through the JAs and then of course asking the JAs to QRX for a few minutes we started to log Europe at 1201 Z. First European in the log was Lee G0DBE from Liverpool which followed with other European stations from England, Russia, Scotland, Sweden, Kazakhstan, Ukraine, Belgium, Finland, Denmark, Netherlands, Germany and France.

Along the way we also managed to log stations from Canada, Hawaii, South Korea, Asiatic Russia and of course more USA from the west coast to the east coast. All up on the opening night we logged 121 stations within the two hour opening on 20 m, a success? We think so!

The next morning we awoke around 7 am (2100 Z) and at 2113 Z we worked our first VK, Denis VK4ACE from our home town in Ipswich on 20 m with 59 reports back and forth. He was more surprised than we were of the signal on 20 m considering the distance for ground wave was approximately 400 km. Prior to the event kicking off at 10 am we raised the Clark Mast with our full sized G5RV to work the additional bands over the course of the weekend.

Throughout the day and into the late afternoon we worked more Aussie stations plus quite a few lighthouses; we also managed to log QSOs in New Zealand, Papua New Guinea, New Caledonia, USA, South Cook Islands, Japan and Hawaii.

Saturday night we made our first appearance on 80 m and what an opening into the VK call areas of VK2, VK3, VK4, VK5 and VK7. We managed to work the band all night until 1332 Z when things started to fade for the night. During our time on 80 m we also worked a handful of ZLs that were still awake and also Victor E51CG from Rarotonga in the South Cooks.

After a 30 minute break we changed to 40 m at 1400 Z and

worked quite a few Americans including our first USA Light, K6A at US0033 Point Vincente Lighthouse and Juergen VE7FE/P at CA0028 Nootka Island Lighthouse.

Returning to 80 m at 1530 Z we met up with Tommy VK2CL at AU0071 Montague Island Lighthouse and decided to sit with Tommy for just a few minutes as he worked other stations who then in turn worked us as well. Within 15 minutes we managed to have a group of four Lighthouses all working in sync on one frequency: they were Sandy Cape AU0043, Montague AU0071, Point Perpendicular AU0030 and Grassy Hill AU0019. We managed to keep the eyes open and work a few VK nightowls until 1630 Z when it was decided to go QRT for the night/ morning.

Sunday morning started off slowly with only 13 QSOs logged within VK and ZL, but from lunchtime onwards we managed to find a surprise opening on 15 m with North America and Asia. First station logged in the pile up at 0208 Z was Masa JE1LET with a beautiful 59 +20 dB from Kanagawa prefecture in Japan. A total of 77 stations were logged all over the USA, Japan, Alaska, Indonesia, New Zealand and China, finishing up our opening on 15 m with Zhu BD4CZX in Shanghai.

Sunday afternoon and evening were not as successful as the previous days but we did manage to work into North America, Asia and we picked up what we thought was the highlight of the ILLW, our first South African Light ZS1CT with Greenpoint Lighthouse ZA0006 in Cape Town with a beautiful 59 via the long path.

Later Sunday evening, due to the other bands being quiet, we dialled up on 40 m and noticed the signals from USA were very strong but no-one seemed to return our calls, so with that we checked into one of the US Nets and gave Sandy Cape Lighthouse and Fraser Island to those who wanted to work us. Seemed to be a success with our friends across the Pacific and beyond as we worked 20+ stations in the US and a few JAs even dropped in to say hello and exchange a report or two.

After a quick search around the bands at 1200 Z it was a foregone conclusion that not many QSOs would be made so it was decided that VI4FI would now be QRT for 2011.

Throughout the Sunday night and early hours of the Monday morning the weather changed for the worse as high winds and heavy rain hit the island. As our departure had to be precisely 6:15 am Monday morning it was going to be a very early morning for the team to take down the antennas regardless of the weather conditions.

At 4.30 am, with coffees in hand, the first antenna, the G5RV on the 10 m Clark mast - was lowered during a break in the heavy showers. With one antenna down and one to go, we quickly moved onto the Butternut with all the ground radials, as this was going to take a significant amount of time to disassemble properly and pack away. With Paul VK4FPDW loading the Clark Mast onto the 4WD, both Graham VK4GRA and myself (Derek VK4MIA) started to work on the Butternut while Mike VK4QS packed up the FTDX-5000 and other radio equipment inside the cottage. With the rain holding off we made the best of it and moved quickly and managed to get it all packed away within about 30 minutes or so.

With 6 am nearing, Ranger Steve Nicol dropped in to check our progress and said we would have to leave by 6:20 am to catch the low tide at Ngkala Rocks at 7.30 am. This section of the island is the most treacherous and is very tide dependent; should we miss our targeted window then it would be disastrous for us all as there would be no-where to go.

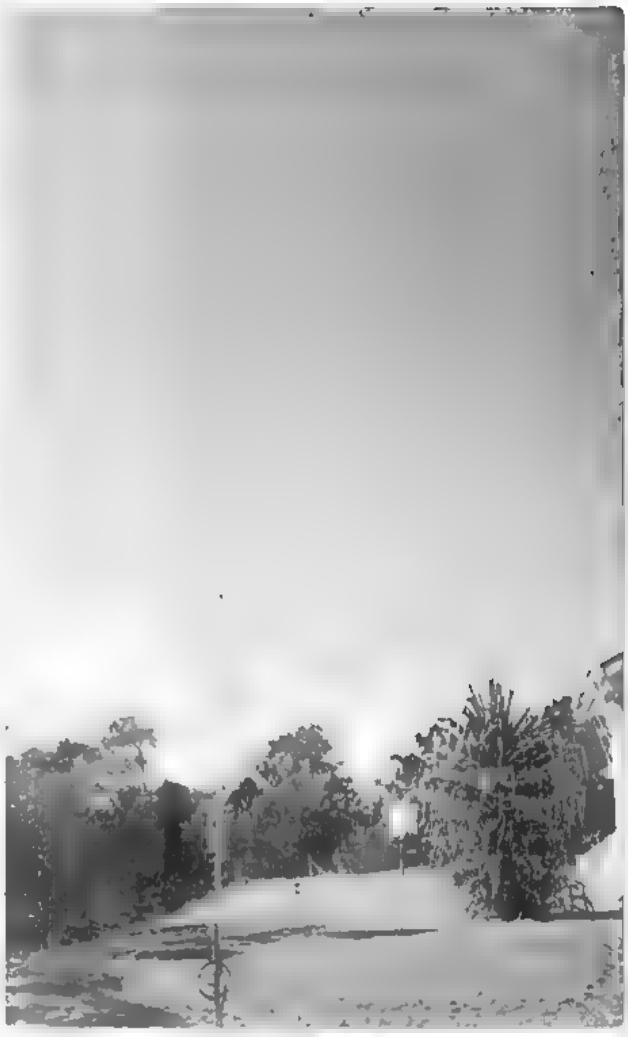


Photo 3: The Butternut HF6V. Our magic antenna for the weekend with ground radials for 10, 15, 20, 40 and 80 m (20 ground radials in total).

At 6:20 am, with the 4WD packed and everybody accounted for, we set off on the return journey and said goodbye to the Sandy Cape Lighthouse for 2011. Upon arriving at the beach at Sandy Cape it was evident that we would have quite a challenging trip back home with south easterly winds battering the east coast of the island. On more than one occasion we had a few near misses with washouts and sections of the beach being gouged out from the pounding waves and heavy

winds. Hats off to Paul VK4FPDW for the precision driving on the beaches of Fraser, and in particular on the return trip. On one occasion he just managed to turn the 4WD around before dropping off a half metre drop that was only visible within a few metres. Had he not been on the ball the 4WD would certainly have flipped for sure.

We made only two stops along the return journey, the first at Champagne Pools near Indian Head for a photo opportunity and the second at the Maheno Shipwreck for Mike VK4QS to jump out and grab his photo opportunity - being ex-Navy!

After over four hours travelling down the east coast of Fraser Island in atrocious conditions, we were glad to reach the barge at Hook Point around 10:45 am for the trip across the very choppy Coral Sea back to Inskip Point at Rainbow Beach. With an early lunch being had at Rainbow Beach, we set off for home around m dday, non-stop, and returned home around 3 pm.

We look forward to making the trip again next year to Sandy Cape Lighthouse to once again put the VI4FI callsign on the air. Special thanks to the staff at QWPS, Ranger Steve Nicol for the assisted journey on the western beach of Fraser and making sure everything ran smoothly with the electricity at the Lighthouse. Trischelle Lowry, thank you so much for the extraordinary effort in making sure our trip to the Lighthouse would be a reality and also taking the time out of your busy schedule to keep in contact with us - even on Sundays!

Extra special thanks to our sponsors, first and foremost Dave Tavener from VK4ICE Communications for supplying our antennas while on the island; you certainly outdid yourself and we look forward to working with you again next year when we do it all again.

Ipswich City Council, to Paul Pisasale and Andrew Antoniolli, thanks so much for your continued support of the IDRC and all of our ventures to come in the near future. You guys are a significant part of our club and without your continued support we would not be where we are today.

With all that said I would like to take the opportunity to thank all the stations that worked us, in particular Graeme (Doug) Semmens VK7KT for letting everyone know of our limited to nothing internet and mobile coverage while on the island, cheers mate!

In total we made 414 QSOs into 30 DXCC entities with a total of 43 lighthouses worked. Further information and updates on the QSL card status will be posted on the official website at *www.sandycape2011.com* The printer of our cards is Gennady UX5UO who kindly offered his services to us once he read about our trip. The online log has been uploaded to Club Log and if you worked us using a /P callsign, make sure to enter that into the log search.

Best 73 and we look forward to working you next year!

VK7news

Justin Giles-Clark VK7TW
Email: vk7tw@wia.org.au
Regional Web Site: http://groups.yahoo.com/group/vk7regionalnews/

Photo 1: CCARC members at the DATV presentation.

International Lighthouse and Lightship Weekend

The ILLW saw a record number of lighthouses activated around VK7. On the west coast Dion VK7DB undertook a first time activation of the Sandy Cape lighthouse and Graeme VK7KT and VK7MAJ activated Bluff Hill lighthouse. In the north west at Devonport, Winston VK7EM and Scott VK7NWT activated Mersey Bluff lighthouse. At Rocky Cape lighthouse was Stuart VK7ZM and at Table Cape was Wayne VK7NET, Eric VK7NFI and Rex VK7MO. In the north east, Kevin VK7HKN and Peter VK7KPC intended to activate the Eddystone lighthouse, however the weather made the road impassable. Planning is underway for 2012! In the north at Low Head a team consisting of Gavin VK7VTX, Ray VK7VKV, Albert VK7LH (VK3KLB), Steve VK3DAG and Ben VK7FBGS activated that lighthouse. In the south near Triabunna/Spring Bay the WICEN South crew of Roger VK7ARN, Garry VK7JGD and Peter VK7TPE activated VK7WCN at the Point Home Lookout and on King Island from Currie Light was Tony VK3VTH/7.

World's first DATV QSO Party

Congratulations to Peter VK3BFG and the crew that organised a fantastic night of DATV on Friday, 26 August. Taking part from VK7 was Winston VK7EM from Penguin and it was very apt that Winston took part as he was the first VK7 to receive the signal from the Mt Dandenong VK3RTV digital ATV repeater. VK7OTC the club station of the Radio & Electronics Association of Southern Tasmania Inc. also took part with many members in the DATV studio being Skyped into VK3BFG, who then relayed onto the VK3RTV-2 repeater through the wonderful British Amateur TV Club streaming service at *http://batc.tv/* There were many others and overseas stations who took part in the DATV QSO/Net. Congratulations Peter and Happy Centenary to AR Victoria!

Northern Tasmania Amateur Radio Club

By the time you read this JOTA will be upon us on October 15th and 16th. In the north Peter VK7KPC will be setting up a station on Sunday 16th from 10 am at the Kings Meadow Scout Hall and it will run through to late afternoon. Peter would love to hear from anyone willing to give him a hand. The August NTARC meeting was a social gathering at the historic Queen's Head Hotel in Perth (in northern Tasmania) for a dinner meeting. Even though the flood waters surrounded the town, 22 members and guests managed to navigate their way and enjoyed a great night.

Bill VK7MX on a recent VK7 regional broadcast planted the seed of a possible ILLW reactivation of one of the three lighthouse tenders, one of which still exists – the MV Cape Don. These ships were in the Lighthouse service up until the 1980s and sailed from lighthouse to lighthouse with deliveries of goods and lighthouse keepers and their families and performed a maintenance role with their well-equipped workshops. Bill 'floated' the idea of an ILLW activation on the Cape Don that now resides at Waverton in Sydney Harbour. I am sure Bill would like to hear from you if you are interested.

Cradle Coast Amateur Radio Club

Congratulations to Maurice VK7ZMR who was granted the first life membership of the CCARC recently. The August meeting was

Photo 2: Barry VK7TBM OAM.

a presentation given by the author and was entitled a 'Practical Look at DATV'. The presentation was well attended and many great questions were asked. Thanks to CCARC for their hospitality.

North West Tasmanian ATV Group (NWTATVG)

Congratulations to Graham VK7FGAA who has successfully upgraded to his standard licence; we look forward to hearing Graham on the air with his new callsign. Tony VK7AX lets us know that he has upgraded his video and audio streaming to the British Amateur Television Club streaming service at: *http://batc.tv* and go to the member stream – VK7AX.

Radio and Electronics Association of Southern Tasmania

Last month I reported that Theo Klop was successful in gaining his Foundation licence. Theo now has his callsign, which is VK7FTAK; welcome Theo. The August REAST presentation night was given by Barry VK7TBM who was a founding member of the Tasmanian Small Marine Radio Group that became Coast Radio Hobart, which now monitors the maritime HF and VHF frequencies and provides a range of other services to maritime users in southern Australia. Last year Barry received a Medal of the Order of Australia for his services to Maritime Communications. Thanks Barry.

Our DATV nights continue to be very popular with presentations on GippsTech 2011, hobby robotics, cryptography, Enigma, Arduinos, Lego Mindstorms, wind powered Strandbeests, converting surplus equipment, ultrasonic distance detection, CSIRAC, along with many great video presentations from the DATV Library. We now stream to the internet the Wednesday night presentations from 7:30 pm AEST thanks to the British Amateur Television Club. Go to *http://batc.tv/* and select member streams and look for VK7OTC. We have also been hearing and seeing the SSTV from the ARISS Sat1 satellite here in VK7 and below are two of the SSTV images received by the author.

Photo 3: An SSTV image from ARISS Sat 1.

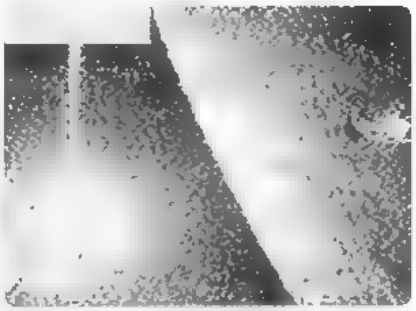


Photo 4: A second SSTV image from ARISS Sat 1.

Silent Key

James (Jim) Glegg Davis VK7OW

It is our sad duty to inform you of the death of Jim Davis VK7OW at 98 years of age, on 4 August, 2011.

Jim got hooked on wireless in 1923 with the local postmaster, who had a two valve battery set! Jim got his own radio in 1926 but never really got serious until 1976 when he passed his Novice licence.

During the war Jim worked as a maintenance mechanic in a Tasmanian flax mill in Latrobe that was used to make parachute material. Jim was also a projectionist at the local cinema. Jim went back into the motor trade after the war and also into selling cars. One of his claims to fame was that he personally wrote to Sir William Lyon at Jaguar cars with a suggestion about padding on the dash to prevent serious injury in the event of an accident, and from the 420G there were new dash designs.

Jim contacted many famous people around the world, among them Grote Reber, and talked fondly of his work mapping the Milky Way. He even bought Grote lunch one day at the Bothwell pub.

Jim is survived by wife Betty and family. He will be sadly missed.

Vale Jim.

Contributed by Winston Nickols VK7EM, Ian Ellings VK7QF and the RAOTC.

VK6news

John Ferrington VK6HZ
vk6hz@wia.org.au

Photo 1: The HARG RD contest crew.

G'day from WA! Sorry, I couldn't resist! What a great few months we have had here in VK6. Hamfest at the beginning of August, the ILLW in mid-August, preparations for the Oceania contest in early October. It's all go over in Zone 29!

This month I have been in contact with Rick VK6XLR from the Mid West ARG in Geraldton. The Mid West Amateur Radio Group (MWARG), established in 2005, is based in the mid-west region of Western Australia, with Geraldton as the main regional centre. We have a small group of keen amateurs who participate in just about every single facet of the amateur hobby, from CW to advanced digital modes, from HF right through to satellite, and to digital communications via the Internet.

MWARG's repeater VK6ROO on 146.775 MHz is active but is showing its age. Due to kind donations, it will be upgraded in the near future. The IRLP node 6262 on 439.150 MHz is available for all to use. The node also relays news broadcasts from around the world. These play automatically on Friday to Monday nights at 1900 hours local. VK1WIA News and NewsWest is relayed at 0900 and 1900 hours local on Sundays. All news broadcasts can be transmitted on-demand.

On behalf of the Wireless Institute of Australia Exam Service, MWARG in conjunction with Ham College, can conduct examinations for all licence levels on an as-required basis. To find out more about the club and its activities, please follow the various links on the website at *www.mwarg.org.au*

As usual, the Hills ARG has been very busy over the last few months.

From Bill VK6WJ, the Publicity Officer at HARG:

The Hills Amateur Radio Group, affectionately known as HARG, has been very busy again during August. We were represented at Hamfest and everyone had a really good time. Thanks to NCRG for organising a great event. We gave away a number of leaflets explaining the aims and future plans for the club and now have some new members as a result.

HARG took part in the RD contest with a barbecue at the club's headquarters in Lesmurdie. One of the ideas was to show the new recruits to amateur radio how a contest worked and Marty, our Contest Manager, was on hand to show them the ropes. Some members stayed late to keep the club station going while others raced home to get extra points for WA from their home stations. Heath VK6TWO and Monique VK6FMON set up a portable station not far from the club and once again braved the cold and rain overnight to get those extra points.

During August we kicked off our monthly series of technical talks with a discussion and demonstration of home brew VHF/UHF antennas by Bill Rose VK6WJ. The next talk, on 24 September, will be on Software Defined Radio by Richard Grocott VK6BMW followed by Data Modes on 29 October, by Steve Hyland VK6ST.

Photo 2: The new NCRG tower trailer in refurbishment mode.

HARG also operated portable for the ILLW from North Mole lighthouse in Fremantle. More on that next edition.

Now over to NCRG who, at the beginning of August, hosted another successful Hamfest. Thanks guys for organizing this annual event. Over 350 hams from all over VK attended the event.

Here is the latest from NCRG:

A couple of weeks ago the NCRG had the opportunity to collect an old light trailer from a mining service and supply company, after some time of lobbying by Keith VK6RK, vice president of the NCRG. It was a heavy piece of equipment especially with the diesel generator and the counter weight for the mast still attached. With the generous help from the supply company, the diesel generator was removed and the trailer was brought to the club premises. So far cleaning, de-rusting and undercoating has commenced. The plan is to have the trailer ready for our traditional field day at Muresk for the Oceania DX contest in October.

As usual NCRG will travel to Muresk Agricultural College near Northam, which is approximately 100 km east of Perth, to participate in the Oceania DX contest. This year we want to use the new trailer instead of an aluminium tower for a tri-band Yagi. The wind up mast is 9 metres and the plan is to slide an extension tube inside the mast to bring the antenna to around 12 metres, and include a rotator. This will be a change from past years where the 'Armstrong' method was employed to swing the beam! The trailer will be made street legal and the plan is to use it on other occasions and to show the presence of the ham radio operators in the community at popular occasions.

As you can see it is all go here in VK6! Thanks to all who contributed this month. If you have something you would like included in the next edition, please email it to me at *vk6hz@wia.org.au*

73 John VK6HZ

Erratum

A simple and reliable tuning indicator for a 100 watt HF transmitter *by Warren Stirling VK3XSW.*

Please note that there was a typographical error at the end of the last paragraph on page 33 of this article, published in the September 2011 issue. The text as printed reads "... was confirmed as a 50 mA movement ....". The text should read "... was confirmed as a 50 µA movement ....". i.e. a 50 microamp movement. The proofing team missed this error and we apologise for the error.

How to manufacture a double sided PCB

Murray Lang VK6HL

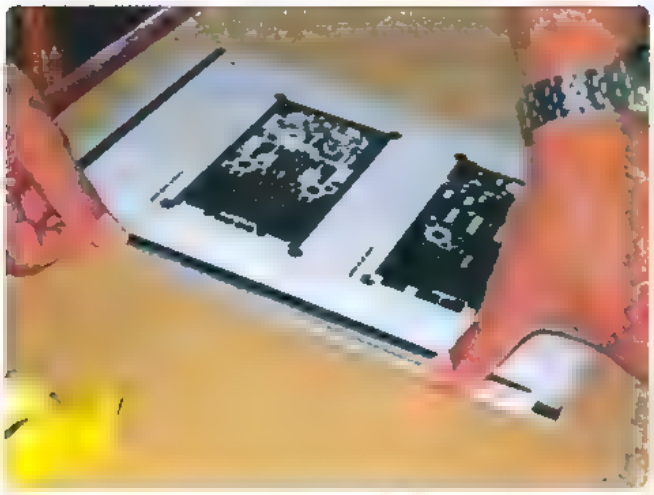


Photo 1: For all photos, refer to text

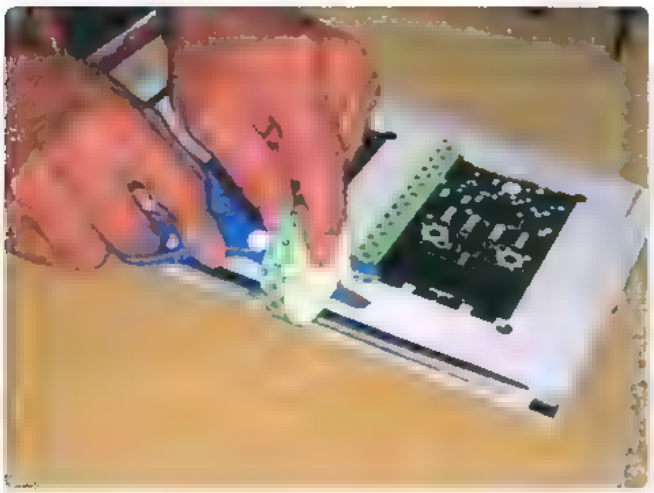


Photo 2

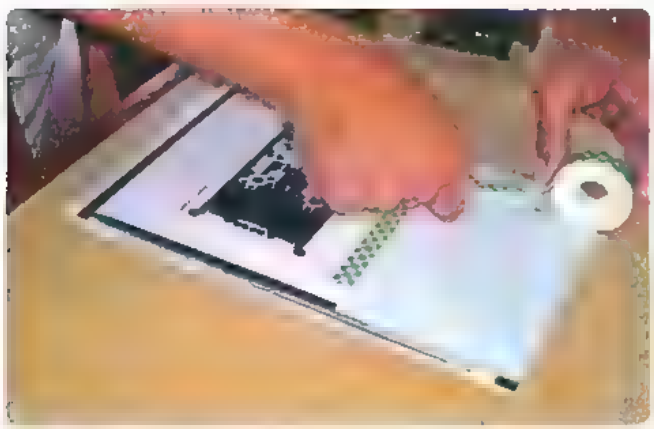


Photo 3

Some years ago I wanted to produce a double-sided PCB, but felt certain that an approach to setting up double-sided artwork involving guide pins and drilling was going to go badly for me. After some pondering I came up with a solution described here, which employs double-sided adhesive tape.

Tape down the artwork transparency of one side with a blank sheet as backing (for contrast). I like to do this on a board in case I need to move. Refer Photo 1.

Apply a length of double-sided adhesive tape to one edge of the artwork. Refer Photo 2.

Apply another length of tape along an adjacent edge. I like to use the blank PCB as a guide. Refer Photo 3.

Now carefully overlay the other transparency such that everything aligns properly.

With the fingers of one hand firmly pressing down on the top transparency (well back from the tape), lift it up and hold it with your lips, then remove the backing from the longer of the two lengths of tape. The backing stays on the adjacent length. Refer Photo 4.

Carefully lower the top transparency down onto the exposed tape. Re-check alignment before pressing the transparency gently onto the tape (to avoid distortion). Then press a little harder to get full adhesion.

Cut away the excess transparency to make things more manageable. Refer Photo 5.

You now have a sort of booklet into which you can snugly place your sensitised PCB blank for exposure. Refer Photo 6.

I only have a simple one-sided UV exposure box, but have not had any problems with flipping the package over to expose both sides. Reasonable care is all that is required because the boards tend to fit quite snugly into the package.

This technique is useful even for single-sided PCB exposures. It is uncanny how boards and artwork can move around in exposure boxes, despite great care.

Note however that it might be unsuitable for many PCB designs that rely on plated-through holes. Of course you can use hook-up wire to complete a 'via' connection, but the problem comes when a hole is for a fat component that prevents you from soldering both sides. If you are designing your own board then you can account for this.

Otherwise I believe that double-sided PCBs are as easy to produce at home as single-sided ones. I hope that some of you are encouraged to consider a double-sided PCB design for your next project.

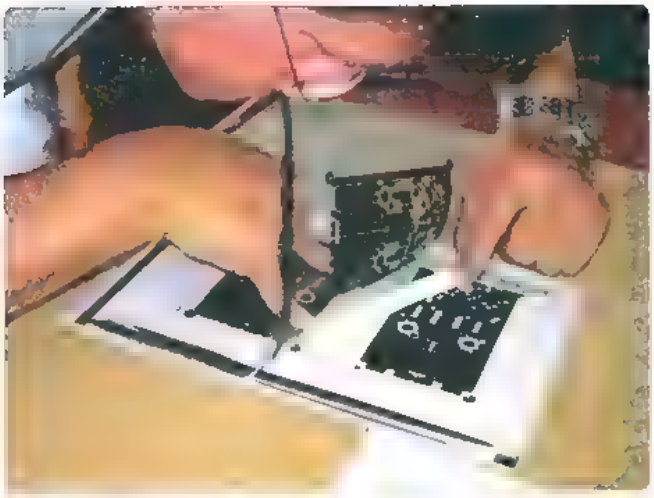


Photo 4

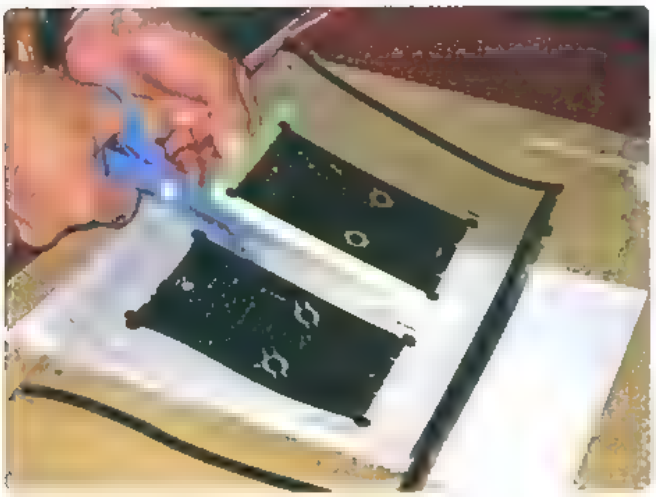


Photo 5

Photo 6

DX-News & Views

John Bazley VK4OQ
john.bazley@bigpond.com

As reported in DX Bulletin 28 from ARRL Headquarters, Newington, CT on 14 July, 2011, the Republic of **South Sudan** is now a member of the United Nations; the new country is a new DXCC entity by way of Section II, 1(a) of the DXCC rules. The DXCC Desk will begin immediately accepting QSOs for this new entity, with a start date of 14 July, 2011. According to DXCC Manager Bill Moore NC1L, the Honor Roll numbers move from 340 to 341 for the Top of the Honor Roll, and for Honor Roll it becomes 332. *'The deadline for the Honor Roll and annual listings is 31 December, so you must submit the new entity to DXCC by then in order to retain your Honor Roll status,'* Moore explained.

The operation from South Sudan ended last week with 121,286 Qs, 27,994 unique callsigns and 176 countries in all 40 CQ zones. Mode totals were CW 55,458, SSB 47696 and RTTY 18,132. The RRTY total was a new world record.

T32C - The container of equipment for the T32C expedition to Kiritimati, **Eastern Kiribati**, from 28 September-26 October, has reached Fiji and is due to ship soon to T32. *'The team is now pretty much complete, with no less than 41 operators, some of whom will be there for the whole period, others will be there for the first or second half. At any one time there will be around 30 operators on the island, permitting us to operate round the clock on all bands with, propagation and other factors permitting, two stations QRV on each of 80 through 10'*. The latest Press Bulletin, issued on 2 August, and extensive information on the DXpedition can be found at *www.t32c.com*

It will be interesting to see the final number of QSOs that they make, taking into account the number of operators and the time that they will be on the island.

JD1 - **Minami Torishima:** Take JG8NQJ/JD1 will be active from Marcus Island until mid-October and will return in December. Current activity is only on 30 and 17 but when he returns in December he will be working all bands. QSL to home call, by the bureau, or direct to JA8CJY. He also has an on-line log available at *http://dx.qsl.net/cgi-bin/logform.cgi?jd1-jg8nqj*

KH5 - **Jarvis Island:** OPDX reports the previously announced DXpedition to Jarvis Island has been postponed to November or December, 2012 due to a scheduling conflict with the Braveheart.

V47JA, operator John Abbruscato, will again operate from his Calypso Bay, **St. Kitts** vacation home, 90 metres from the water's edge. The dates this time are 10 October-5 November. John plans to be on 80-6 m SSB, including 60 m, and the CQWW SSB Contest on 29-30 October, single operator all band. He is equipped with a Kenwood TS-590S, Yaesu FT- 857D, and an SB200 amplifier. For antennas, it is an 80-10 m dipole, metal roof mounted verticals and a three-element Yagi on 6. His XYL Cathy W5HAM will occasionally operate as V47HAM. QSL all to his home call, W5JON.

RI1FJ, operator Evgenij UA4RX left **Franz Josef Land** early this month, replaced by RI1FJL, operator Viktor UA3ME. Also there is RI1FJA, operator Andrey RA3MD. He is equipped with a SteppIR Yagi. Both of these new operators will be there on station until September, 2012. QSL both via RX3MM. Leaving FJL, outgoing operators UA4RX/0 and UA1PBA/0 operated for a few hours on 11 August from **Vize Island**, AS-055, on their way home.

Tom TZ6TR, a German amateur radio operator, has been QRV in the Tomboutou region of **Mali** since March of last year. He is running an IC- 706MKIIG running 100 watts. His antennas include a commercial 40 metre long dipole with 9:1 balun and a full wave triangle for 17 and 6 metres. Activity is on 80, 40, 20, 17, 15, 12, 10 and 6 metres on SSB as well as FM on 10. Tom is there working for a development agency until 2013. So far he has only been confirming QSOs on eQSL, which is not accepted for DXCC. He plans to post an address, on QRZ.COM, for those needing a paper QSL. Also he has agreed to send a copy of his licence to Newington to be accredited for DXCC. His German call is being withheld to avoid QSL cards being sent to a wrong address.

Chris GM3WOJ (GM2V/ZL1CT) has had to push back his DXpedition to **Niue Island** (OC-040). Originally he was going to be QRV as ZK2V starting 15 October. The new dates are 21 October until the end of the year. Joining him for two weeks will be Keith GM4YXI (GM5X), probably signing ZK2X. Chris has a website at *http://www.zk2v.com/*

To celebrate the 2011 Rugby World Cup being held in **New Zealand**, special call ZL4RUGBY will be activated by Paul ZL4PW from 19 August to 31 October.

Gay N4SF and Steve AA4V plan to join Jan 4X1VF/4X0A in this year's CQ World Wide Phone Contest. They will be in the multi-two category from **Bermuda** using AA4V/VP9 in the contest and home calls /VP9 before and after the test. Activity will be on SSB, CW and RTTY on 1.8 through 50 MHz outside the weekend. Plans are to arrive on the island on 26 October and depart on 11 November.

There has been a change of callsigns for the upcoming PA6Z Dutch DXpedition and Contest Group's October DXpedition to **Guernsey Island.** Originally they were going to use MU/PA6Z, but now they will be operating as MU/PA9M, from 23 to 30 October, including the CQ WW SSB DX Contest. Activity will be on 1.8 through 50 MHz on CW and SSB. They have a web page at *www.pa6z.nl* QSL via PA9M.

Due to difficulties in organizing and making arrangement for the transportation to **Banaba**, a decision was made to reschedule the HA

South Pacific Tour DXpedition to January/February 2012.

Gab HA3JB has received his renewed licence to operate in **Egypt** as SU/HA3JB from 1 September until 30 November. He plans to be QRV on CW, SSB, RTTY, PSK and some SSTV. Gab was QRV in 2010 using the same call and prefers no dupes this year. Activity will be on 1.8 through 28 MHz. QSL via HA3JB.

J28FJ - **Djibouti**: This call belongs to Jacob KBØZIA who is in Djibouti City until next spring. He is new to DXing and this is his first operation outside the states. He is operating 40-10 mostly SSB but may try digital if he can get the equipment for it. QSL to his home call.

Starting 25 August Harry G0JMU will be back at Club Makokola in **Malawi** and QRV for three months as 7Q7HB. Ely IN3VZE will be joining him in mid-September for a two week stay as 7Q7CE. Harry is taking a new 17 metre antenna and plans to be active on 20, 17 and 15 metres CW and RTTY. Ely operates on SSB and the digital modes. QSL 7Q7HB via G0IAS and 7Q7CE via IN3VZE.

9N1FE is the **Nepal** licence for Fernando Cardona WP4FE from Puerto Rico. He is in Nepal working in a mission hospital, the Scheer Memorial Hospital of the Seventh-Day Adventist Church in Banepa, 30 km east of Kathmandu. Fernando says he will be active occasionally, only on 20 m, in his free time. He has a Kenwood TS-120S to a Comet H422 antenna in a V configuration, 25 to 30 metres high, supported by a water tank. QSL to Fernando A. Cardona, PO Box 88, Kathmandu, Nepal.

Members of the **United Arab Emirates** (UAE) contest group and the South East Europe Contest Club will team up to put A61K on the air from the UAE during the CQ World Wide SSB DX Contest on 29-30 October. Team members include A61BK, A61K, DK6XZ, S52RU, YT2T and YU2M. This is expected to be a multi-two effort.

Gerard ZS6KX has been working at the SANAE IV Base on **Antarctica** since late last year and is now QRV. Listen for ZS6KX/7 on 20 metres, between 14175 and 14190 kHz, between 1400 and 1700 Z.

DL8OBF, DJ7JC, EC8AFM, DL2SAX, DL5OCR, DL1QW, DF3FS and DF7ZS will be teaming up to put CR3L on the air from the **Madeira Islands** in this year's CQ WW Phone contest. This will be a multi-multi effort.

CN1C will be a CQWW SSB operation from the **CN8PA** station. HB9EOU, HB9CVC, HB9HLJ, HB9HLM and F5VLY will join their host, CN8PA, to operate. The special CN1C contest call will continue to be used by CN8PA and any other guest operators for another three months after that. QSL via EA7FTR.

C5A in **The Gambia** will be multi-multi in the CQWW DX SSB Contest 29-30 October. Operating will be OK8WW/OM2TW, OK1RI, OM6NM, OM5AW, OK1DIG, OK1NY, OK1FFU and OK1DO.

During the CQWW DX CW Contest 26-27 November, OK8WW/OM2TW, OK1RI, OM6NM, OM5AW, OK1DIG, OK1NY, OK1FFU, OK1DO and OM2IB will also put C5A in the MM category. They have a website at *www.om0c.com* QSL via OM2FY.

II9T will be multi-2 in the CQWW SSB and CW, from IT9, **Sicily**. Operators IT9CHU, IT9CJC, IT9EQO and IT9BUN say they are looking for additional operators, 'the best operators in Europe. Contact IT9GSF for details.' Another station will be single op 20 m and single op 160 m.

Finally, some QSL information regarding **PJ2T**. 'Following the untimely passing of long-time PJ2T QSL manager Scott Lehman N9AG, the Caribbean Contesting Consortium (CCC) is very pleased to announce that the QSLing legend Joe Arcure W3HNK will serve as the new PJ2T QSL Manager. QSLs sent to N9AG and awaiting response will be transferred to W3HNK: no need to re-send any requests. All PJ2T logs are current on Logbook of the World (LotW), and new logs are uploaded promptly following each PJ2T contest operation."

Special thanks to the authors of *The Daily DX (W3UR), 425 DX News (I1JQJ)* and *QRZ.DX* for information appearing in this month's DX News & Views. For interested readers you can obtain from W3UR a free two-week trial of The Daily DX from *www.dailydx.com/trial.htm*

VK3 news Amateur Radio Victoria News

Terry Murphy VK3UP
www.amateurradio.com.au
vk3up@amateurradio.com au

Amateur Radio Victoria Centenary

This year marks the 100th anniversary of what began in November, 1911 as the Amateur Wireless Society of Victoria, quickly changing to the Wireless Institute of Victoria, and today is known as Amateur Radio Victoria. Its members hope all radio amateurs will join in the celebration. Part of the activity includes an operating award, with the rules now available under the Award section of the Amateur Radio Victoria web site.

During the celebratory period, from 1 August to 30 November 30, contact with ARV members gains two points. A bonus of ten points is available by working VK3WI during the Remembrance Day and International Lighthouse and Lightship weekends in August, and the Oceania DX Phone Contest on 1-2 October.

Special event call sign VK100ARV

Amateur Radio Victoria special event call sign VK100ARV will be used throughout the month of November to help celebrate ARV's Centenary.

VK3WI on air at ARV Office for RD contest

A working bee consisting of members of the ARV Council gathered on the weekend prior to the RD contest and installed an HF five band vertical antenna at the ARV office in Ashburton. The antenna was utilised during the RD contest the following weekend and many excellent reports were received.

VK3WI on air for the International Lighthouse and Lightship Weekend

Amateur Radio Victoria again participated in the ILLW event on 20-21 August by setting up a station at the Lighthouse / Time Ball Tower in Williamstown and using the call sign VK3WI. Active bands were 20, 40 and 80 metres, plus 2 metres and 70 cm.

The crew consisted of Barry Robinson VK3PV, Ian Downie VK3XID, Michele Grant VK3FEAT and the Event Coordinator Terry Murphy VK3UP. Some of the visitors to the station over the weekend were Jim Linton VK3PC, Derek McNeil VK3XY, Ed Seeto VK3LIP, Phil Ryan VK3PJR, Wayne Bruce VK3VCL, Philip Johnstone VK3YAZ, Jonno Karr VK3FMPB plus several others as well as Colleen Hartland MLC who popped in for a brief chat.

The world's first DATV QSO Party

The world's first DATV QSO Party will be on Melbourne's VK3RTV repeater later this month. The QSO Party has been organised by Peter Cossins VK3BFG as control station and will include the Amateur Television Network of California and the British Amateur Television Club (BATC).

Peter VK3BFG said that 8 pm AEST Friday, 26 August is quite good timing to kick off the two-day event as part of the Amateur Radio Victoria's celebration of its centenary.

Current arrangements include VK7TW (Hobart), VK7EM (Penguin), VK3CE (Bendigo) and VK4XRL (Brisbane). Their video will come via Skype which then be put on DVB-S to VK3RTV2. Melbourne stations will respond via VK3RTV1. VK3BCU is in Thailand and expects also to be Skype-linked.

On Saturday 27 August at 1 pm AEST there will be a link up with Don Hill KE6BXT in California and also a connection with the W6ATN ATV repeater. As on Friday, VK3BFG will take the Skype feed through to VK3RTV2. Anyone anywhere in the world can watch the proceedings via the BATC streaming website. Note that AEST is plus 10 hours UTC.

Upcoming activities and events

VK3WI will be active during the Oceania DX Contest October 1/2. Special event call sign VK100ARV will be active throughout the month of November.

Members of ARV will be activating a selected number of National Parks on the weekend of 19-20 November. A valid contact with a National Park during this activation is worth 10 points towards the ARV Centenary award. For more information visit *http://www.amateurradio.com.au/awards* or if you wish to activate a National Park please contact Tony Hambling VK3VTH, *vk3vth@amateurradio.com.au*

Foundation classes

Enrolments are now open for the quality training experience on 10-11 September, and 19-20 November, that is available at 40g Victory Boulevard, Ashburton. The weekend begins at 9 am on the Saturday for instruction, which finishes around 4 pm, then back at 9 am Sunday for some revision before the written and practical assessments are held. To enrol or obtain more information contact Barry Robinson VK3PV on 0428 516 001 or *foundation@amateurradio.com.au*

Amateur Radio Victoria-VK3WI participation in ILLW 2011

Terry Murphy VK3UP, Event Coordinator, Amateur Radio Victoria

Photo 1: The well organized and resourced ARV ILLW station, VK3WI, literally in the shadow of the Time Ball Tower in Williamstown.

Amateur Radio Victoria activated the Time Ball Tower in Williamstown again this year for the International Lighthouse and Lightship Weekend event, having done so each year since 2005. Normally the weather is not very kind to us being the middle of winter but this weekend was the exception to the rule. The skies were clear and sunny with the temperature around 20 degrees on both days, with little or no wind, which made for a perfect event weather wise. The members of the public were out in force and the ice cream van parked nearby did a roaring trade.

The initial set up of the station commenced around 07.30 am Saturday morning local time. The first contact was made on 20 metres at 00.07 UTC (10.07 AEST) with VK4WIR at Cape Capricorn Lighthouse AU-0059.

The team consisted of Ian Downie VK3XID, Barry Robinson VK3PV, Michele Grant VK3FEAT and myself Terry Murphy VK3UP. There were numerous visitors to the station over the course of the weekend and some hams as well which included, but were not limited to, Jim Linton VK3PC, Derek McNeil VK3XY, Ed Seeto VK3LIP, Phil Ryan VK3PJR, Wayne Bruce VK3VCL, Philip Johnstone VK3YAZ and Joseph (Jonno) Karr VK3FMPB. Colleen Hartland MLC even popped in for a look see and a brief chat.

Adding to the creature comforts this year was the addition of a caravan which allowed for a warmer operating environment than the otherwise usually cold and cramped basement of the Tower. The kitchen facilities also made the preparation of meals and refreshments a lot easier as well.

The HF station consisted of a Kenwood TS-2000 running 100 watts operating on either a 40 metre inverted vee, an 80 metre inverted vee or a ground mounted multi band vertical. Two Yaesu transceivers covered both the two metre and 70 centimetre bands using a Diamond duplexer and a Diamond X50 dual band antenna mounted on a tripod mast.

The noise floor is quite considerable at this location and sometimes can be as high as 10 dB over S9 on 80 metres and an S8 on 40 metres but with perseverance we still managed to log about 220 contacts Australia wide, some DX and 30 lighthouses.

The station was dismantled around 4.00 pm Sunday afternoon after a very enjoyable weekend was had by all. Amateur Radio Victoria will participate in the ILLW in 2012 by activating the Time Ball Tower again and planning has already commenced.

Photo 2: Michele VK3FEAT working the ARV station in the ILLW 2011 event.

The RADAR club returns to Cape Capricorn Lighthouse for ILLW 2011

Les Unwin VK4VIL

Photo 1: The Cape Capricorn lighthouse, and the array of antennas for the RADAR ILLW 2011 activation.

Rockhampton and District Amateur Radio Club (RADAR) returned to Cape Capricorn on the east coast of Curtis Island for the 2011 International Lighthouse and Lightship Weekend. Each year, amateur radio operators visit lights to showcase the history and worth of lighthouses and the role they have played in global development. Effort required to reach the lighthouses varies greatly.

Cape Capricorn Lighthouse is quite remote and necessitates a five hour trip each way between the Cape and Rosslyn Bay, near Yeppoon. This year, conditions were great for the journey out, but winds of 25 to 30 knots developed for the return trip in good following seas. An APRS system was installed on one of the vessels, which allowed club members and friends to monitor the trip.

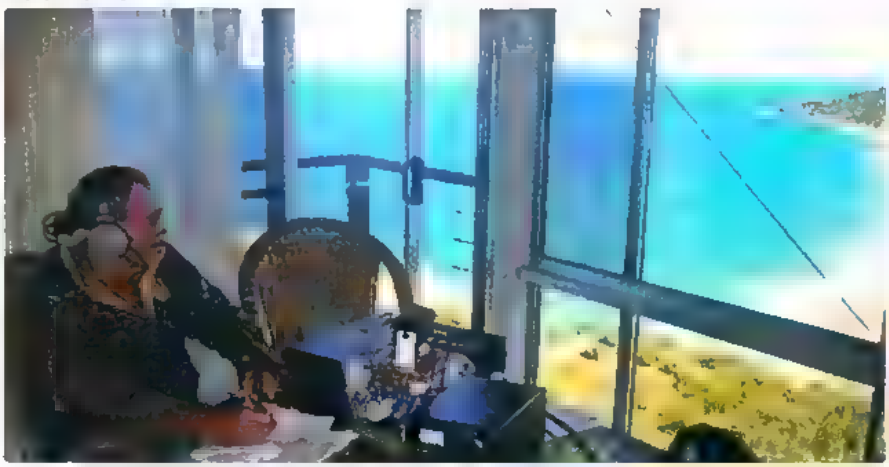
Those involved stayed in the old light keeper's cottage, with antennas at the same position as the original communications mast.

As well as the usual array of wires and beams erected at the lighthouse for long distance work, a cross band repeater was also installed in an elevated position to allow those sightseeing and fishing to maintain communications in the hilly terrain.

During the weekend, operators spoke with over 400 other radio stations in about 30 countries including Germany, Namibia, USA, Japan, Spain, England, Chile and Northern Marianas. In excess of 40 lighthouse stations were contacted, including a good number for the third consecutive year that the club has participated in the event.

The fish were also on the bite in big numbers and the club has booked the site and registered with the Lighthouse Association for 2012.

Photo 2: Dave VK4FWDM at the operating position at Cape Capricorn lighthouse. Note the view!



An 'SGC-230' autocoupler repair

Warren Stirling VK3XSW

At one of our recent radio meetings I was handed an autocoupler and asked if I could have a look at it. The supplied information was that there was 'a relay problem'. It was labelled as a Barrett 511, but on opening it I found it to be an SGC model 230. I know that Codan also badge engineer the SGC-230 as well and call it a Codan 9103, so it was not surprising to find Barrett doing the same.

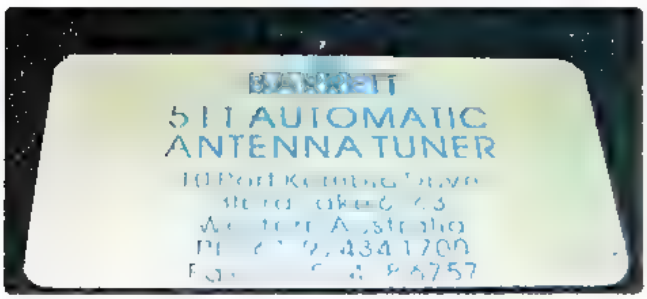


Photo 1: The 'SGC-230', showing the Barrett label.

The first thing to do was to gather some information about the unit so I downloaded the user manual, refer Reference 1, and also the troubleshooting guide, refer Reference 2, from SGC's website. The user guide does not contain any schematics, so I sent an email to SGC, describing the coupler including the internal panel. I also asked about a replacement for the broken ceramic feedthrough insulator for the antenna connection and what the correct power fuse was since the broken 3AG fuseholder had been 'repaired' by soldering a PCB mounting fuse across it.

A return email included the schematics, details for the fuse and the part number for a replacement insulator. Also mentioned was the fact that the unit was over 10 years old. I removed the broken fuse clips and fuse, replacing them with the correct fuse clips and fuse, which were sourced from Jaycar. Power was applied without anything else connected and I was gratified to see the five volt LED come on and all of the relays operated, with the inductor relays staying operated while the capacitor relays released. This was a good sign as it meant that the microprocessor was probably working.

A new insulator was ordered and while waiting for it to arrive I had another look at the SGC website and found a link to a diagnostic ROM, written by Dave Dunfield, refer Reference 3, for his SGC-230, and which happened to be the same version as the one I was working on. This ROM would allow me to function test it without having to apply RF. I built an RS232 to TTL converter, similar to the one Dave details in his article, which is required so that a computer running a terminal program could communicate with the SGC-230. I also programmed a test EPROM from the image file included with the article.

The new feedthrough insulator arrived and was fitted, so I started testing. The RS232 to TTL converter was connected to the SGC-230 and the SGC EPROM was replaced with the one I had programmed. A PC running Hyperterminal was connected and then the coupler was turned on. The result was a prompt from the test program in the EPROM which confirmed that at least the microprocessor in the SGC-230 was working, so it was onwards with further testing.

Dave's program allows you to operate the relays in any combination and also reports the status of the various detectors in the RF deck. A quick run through all the relays showed that, at the least, they worked so the next step was

Photo 2: The board of the auto tuner, detailing specifications.

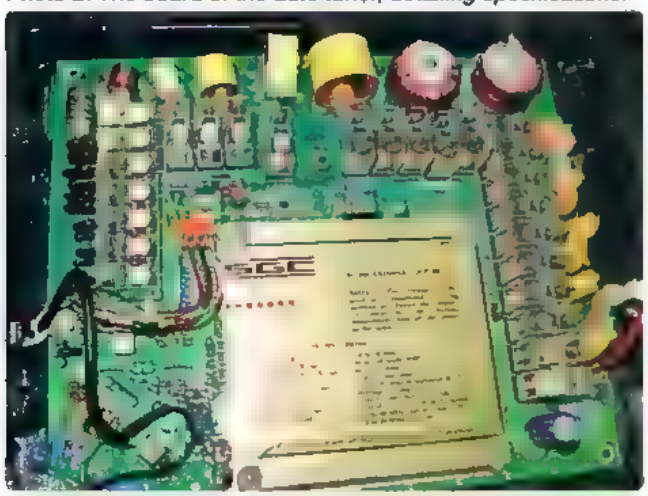
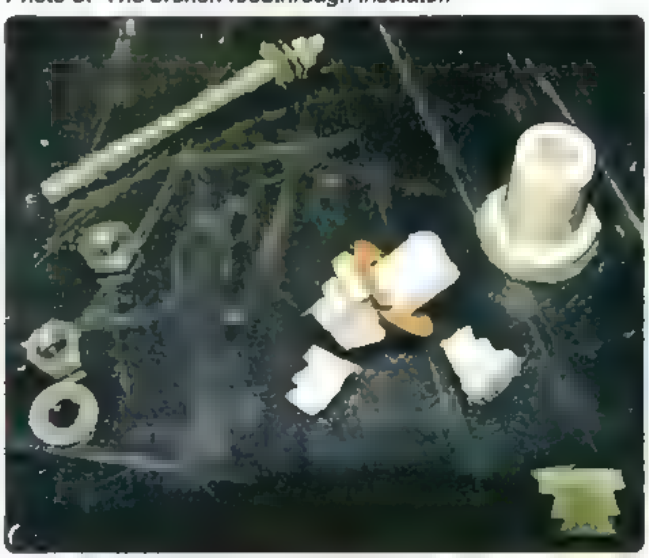


Photo 3: The broken feedthrough insulator.



to test the inductors and capacitors associated with the relays. A look at the schematic for the RF section showed the SGC-230 to be a 'pi' type coupler with capacitors to ground on the RF input and RF output with a number of inductors in series connecting the RF input to the RF output.

Using Dave's program I made sure that all of the capacitor relays were released, to switch them out of circuit, and all of the inductor relays were operated, to switch them out of circuit. An LC meter was connected to the circuit board at the RF input and then zeroed to compensate for any stray capacitance. The transmitter capacitor relays were operated individually and the measured capacitance was checked against the appropriate capacitance value on the schematic. The same procedure was followed to test the antenna capacitors and all were found to be of the correct value. A point to watch is one side of the LC meter has to be connected to the ground trace on the circuit board, not the RF ground terminal which has two paralleled capacitors isolating it from the circuit board ground; there is also a high value resistor across these capacitors which functions as a static bleed for the antenna connection.

To test the inductors the LC meter was connected from the RF input on the circuit board to the RF output at the ceramic feedthrough, then all of the capacitor relays were released and all of the inductor relays were operated to switch the capacitors and inductors out of circuit. The LC meter was again zeroed to allow for stray inductance and then each inductor relay was released in turn and the measured inductance was checked against the value on the schematic.

Since basic testing of the inductors and capacitors showed them to be OK the next step was to apply RF, using a test load instead of a real antenna. I happened to have a 2.2 Ω 100 watt high power resistor to hand, one of the gold coloured aluminium clad units. A resistor like this is ideal for testing antenna couplers as it presents both a resistance and an inductance, while being able to dissipate a fair amount of power.

Admittedly a 2.2 Ω load is a severe test but HF antennas that are electrically very short, which the SGC-230 is intended to be used with, will present a similar and often worse load. Farnell stock resistors like the one I used, with a 1900 VAC voltage rating, refer Reference 4, which is important as a reactive load can present quite a high voltage as evidenced by the type of antenna connection on the SGC-230.

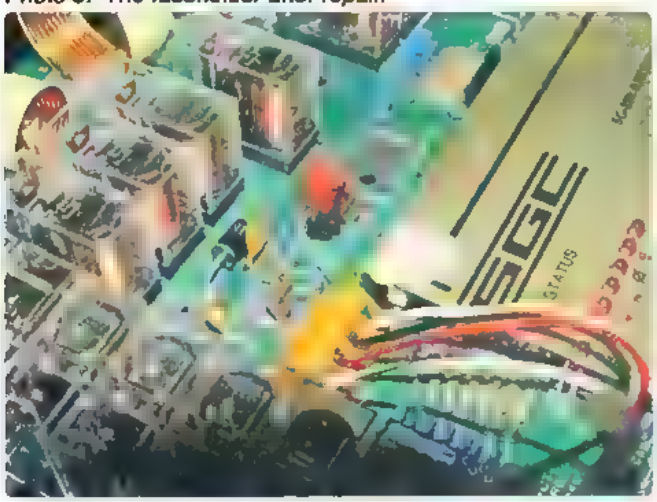
Photo 6: The Arcol 100 watt resistor.

The diagnostic ROM was replaced with the SGC EPROM and the RS232 to TTL converter was disconnected from the board.

I connected the 2.2 Ω resistor between the antenna and RF ground connections and applied about 10 watts of RF but there was no response from the unit apart from the power up action of the relays. Several different frequencies between 80 metres and 10 metres were tried and I saw that the detector LEDS lit up in different combinations at different frequencies, so the various RF detectors were probably OK.

With this in mind I had another look at the schematics supplied by SGC and decided that the frequency counter section that the microprocessor uses to measure the frequency of the applied RF signal was likely to be the culprit

Photo 5: The fuseholder after repair.



given the various detectors seemed to be working and the counter circuit is the only other input to the microprocessor. The counter is made up of a resistive divider and a diode voltage limiter, connected to the RF input, which feeds a 74LS93 divide by 16 counter, followed by a 4020 divide by 32 counter which is connected to the microprocessor.

The resistive divider at the input of the frequency counter section consists of two resistors, both of which tested OK but I found a short to ground at the divider junction. The voltage clamp at the input of the 74LS93 counter consists of a series string of forward biased diodes to ground and one reverse biased diode to clamp any negative signal excursion and it was this diode that was shorted. These diodes are in a 16 pin package, a TND908, which is obsolete so yet another email was sent off to SGC. The response recommended replacing the TND908 with 1N4148 diodes which I did. Another test with RF ended with the same response as before so I removed the RF source and broke out the logic pulser and logic probe. Applying a 100 Hz pulse train from the logic pulser to the input of the 74LS93 and looking at its output with a logic probe showed it was not working, so I replaced it and then retested. Both counters now worked although it took a bit of time to prove this as both dividers cascaded work as a divide by 512 counter and the maximum pulse train frequency from my pulser is 100 Hz; So, for a 100 Hz pulse train on the input the output changes state once every 5.12 seconds.

With the RF and resistor reconnected I tested the unit again and was happy to find it working as I expected it should, so it was time for an on air test. For the on air test I used a 2.75 metre (nine foot) long whip with eight ground radials, each 4.9 metre (16 feet) long. The initial testing went well until I accidentally selected a pre-programmed frequency around 2 MHz. At that point I noticed one of the relays, which turned out to be K12, producing magic smoke. This relay switches an 8 uH inductor in and out of circuit.

A read of the manual (!) confirmed my mistake. At the frequency I had been using the antenna should have been no shorter than seven metres (23 feet - minimum length at 1.8 MHz, not the 2.75 metre length I was using, which would have been OK down to 3.5 MHz. Yet another email to SGC resulted in a replacement relay, and some spares, arriving. With the replacement relay fitted careful testing confirmed the unit was again fully functional, but not foolproof.

References

1. *http://www.sgcworld.com/PubInfoPage.html*
2. *http://www.sgcworld.com/technicalInfoPage.html*
3. *http://www.sgcworld.com/productupdates.html*
4. *http://au.farnell.com/tyco-electronics/hsc1002r2j/resistor-100w-5-2r2/dp/1174284?Ntt=hsc100*

Spotlight on **SWLing**

Robin L Harwood VK7RH

At last spring has arrived and with it the annual clock changeover from standard to summer time as well. Except WA and Queensland, of course, who do not alter their time at all. But of course it really matters little as we use UTC as our standard.

At the end of this month, the northern hemisphere reverts back to standard time, usually on the last Sunday of the month, although continental North America opts for the first Sunday in November. However the Russian Federation has decided not to revert back and to adopt summer time as standard. I do not know if other CIS nations will be following suit. This means that Moscow will now be UTC +4 permanently.

Babcock, which owns and operates the major shortwave senders in the UK, recently announced that they are phasing out the Rampisham site in southern England before Christmas. This is primarily due to both the BBC World Service and DW severely cutting back their needs for shortwave. Also part of the Wofferton site in the English Midlands will be curtailed. This will leave Skelton in Cumbria in operation. Presumably the overseas sites owned or leased by Babcock will be continuing, probably with other clients.

Rampisham and Wofferton go back 70 years and the former was only upgraded in recent years. This means that we will no longer be able to easily hear signals from British sites. I well remember hearing Daventry when I commenced listening to shortwave as a young boy. It used to be easily heard on 7150 from 0545 till 0730 and was known as the Pacific Service. When my parents took me to Britain in 1979, I was able to see in the distance the antenna farm from the coach.

I do expect that there will be further cutbacks to shortwave from the end of the a-11 period from the major broadcasters but what is being revealed is the emergence of domestic senders, long masked by the major players. Sadly they too have been in decline as they either switch to FM or internet streaming.

The Gaddafi Libyan regime collapsed in late August after NATO imposed an air and sea blockade as well as conducting missions in support of the insurgents. Shortwave was used in psychological warfare broadcasts and mainly targeted Libyan troops, operating on known channels but not on broadcasting frequencies. These finished as the rebel movement completed their uprising. Two channels were observed in Europe, 10405 and 10125 kHz.

The Libyan shortwave senders at Sabrata went silent in mid-August. A pro-Gaddafi station was irregularly heard on 8500, a highly unusual choice of frequency. This was in Magreb, a north African Arabic dialect spoken from Morocco to western Egypt.

I was tuning across the 40 metre amateur band one night around 1300 and came across N2GG calling CQ. I thought it was late for an east coast signal to be coming through but he stated he was in New Mexico. Looks like call areas have been abandoned! It is more difficult trying to work out callsign prefixes and they increasingly do not tally with propagation. Please do state your QTH when calling CQ. I have even heard a ZL2 calling CQ but he was in VK7! Confused?

Shortwave is changing but it is not disappearing. The utility sector is increasingly becoming digitalised, making it difficult to identify who they are or where they are located. Remember packet, AMTOR, RTTY? These are modes that have swiftly disappeared. There was a brief RTTY 50/170 transmission on an 8 MHz channel from WLO and the aim was to restart a daily news feed to try and gauge if there would be sufficient interest. However the sender was low power and they apparently had some teething problems and I am unaware if they will continue.

Well that is all for now. Wonder what will be happening next?

The Simple SDR: a basic software defined radio anyone can build – Part Two

Peter Parker VK3YE

Introduction

Last month we described a 'bare bones' software defined radio that allowed reception of a segment of 40 or 80 metres on a basic laptop (or other) computer. Its tuning ease, frequency stability and selectivity beat stand-alone receivers of similar simplicity.

The set had limited tuning range and no rejection of interfering image signals. Modifications that lessen these problems and cover two bands are presented here. Also described is a slimmer model that uses a stronger diode mixer and saves batteries by being USB powered. This is fiddlier to build but preferred for portable use.

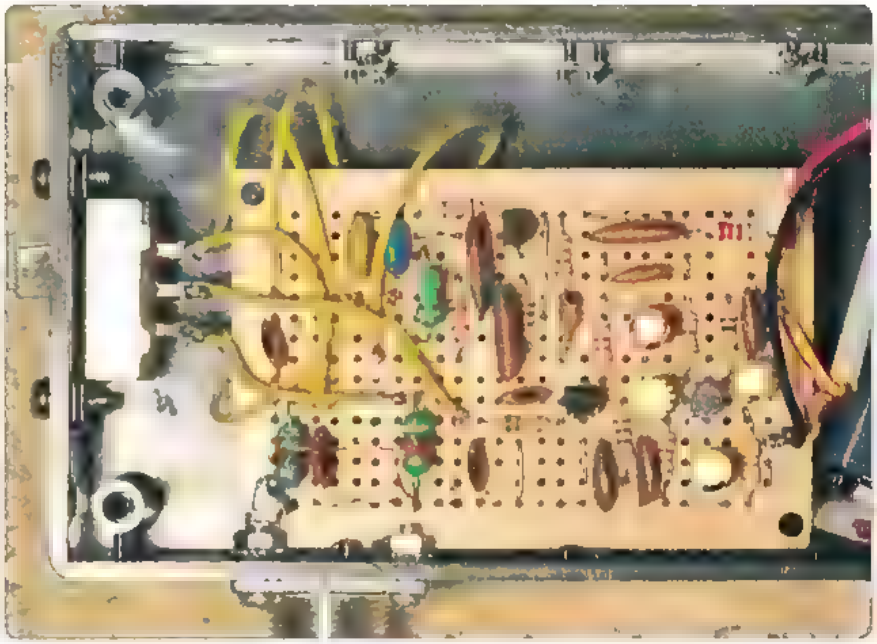


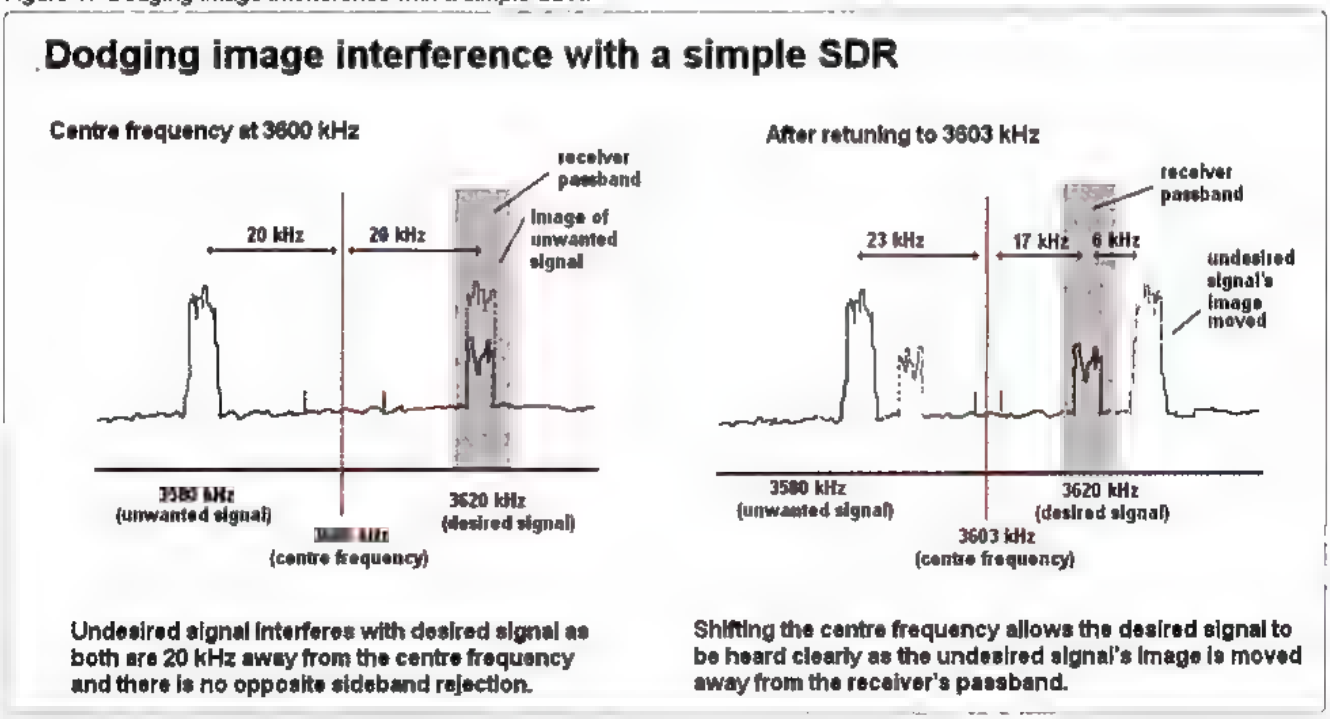
Photo 1: Inside the dual-band SDR.

Frequency agility

The first shortcoming of last month's receiver was its limited frequency range. With a 48 kHz sample rate, coverage was the crystal frequency +/- 24 kHz.

This was overcome by making the local oscillator tunable. You could use a VFO (10 µH and 4.7 µH inductors are good starting points for 80 and 40 metre coverage, respectively) but ceramic resonators were used here. These are like crystals but are less stable. Their main advantage is that they can be pulled to cover much of the band by wiring in a series variable capacitor and (optionally) an inductor.

Figure 1: Dodging image interference with a simple SDR.



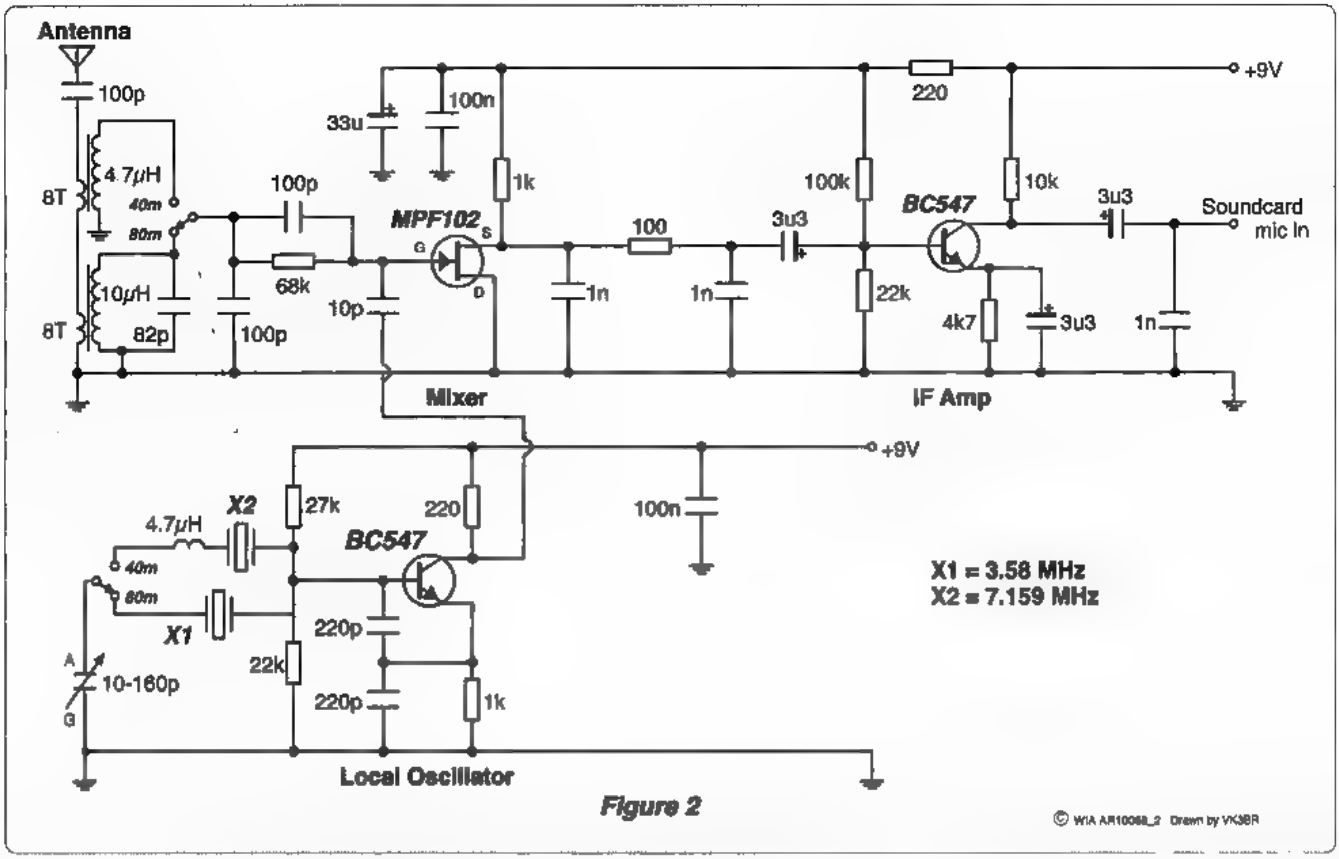


Figure 2: The Simple SDR – dual-band version.

A 3.58 MHz ceramic resonator allows the centre frequency to be varied between 3.515 and 3.615 MHz, allowing a tuning range of between approximately 3.500 and 3.640 MHz. On 40 metres with a 7.2 MHz resonator the range is even greater, covering the entire 7.0 to 7.3 MHz band.

While the top end of 80 metres remains uncovered by this single-resonator arrangement, it wins for simplicity and easy construction. Switching in a second resonator above 3.6 MHz (stocked by Farnell Components) should allow full band coverage over two ranges. Alternatively a VFO could allow wider coverage, though at the cost of more difficult tuning and possible frequency drift.

The tuning capacitor used was a transistor radio variable available from suppliers such as Jaycar. For maximum frequency range use the 'A' and 'G' tabs – leave 'O' unused. A small RF choke in series was required on 40 metres to cover the lower 100 kHz of the band and some experimentation with values (approximately 1 to 4.7 µH) is suggested.

The dial shows the receiver's centre frequency. Calibration is by spotting the oscillator's frequency on an HF receiver or transceiver. Frequencies are written on small pieces of paper glued to the front panel or the rim of the tuning knob. If space is tight it's useful to abbreviate these (for example, 3540 kHz = 54) so that more frequency points can be added and dial accuracy improved.

Operate by setting the local oscillator to the desired centre frequency, observing activity on the display and fine tuning with the mouse. Making a dial for the tuning knob allows the centre frequency to be entered into the computer and the display to function as an accurate dial.

Dodging interference

Image interference was a problem with the receiver described, especially when the band was busy. There are two ways to fix this issue.

The first method is to construct a more complex SDR and use with a stereo soundcard. This is the best solution and allows true 'single-signal' reception with reduced background noise. Built-up and kit SDRs are obtainable from local and international suppliers.

Alternatively, skilful retuning of a simple SDR can move the interfering image signal away from the desired signal. This requires a receiver with a local oscillator that can be shifted by at least a few kilohertz. Unless the band is very crowded, this should be sufficient to dodge interference and allow clear reception.

Figure 1 shows how it works. If the local oscillator is on 3600 kHz and the desired signal is on 3620 kHz, the SDR will produce a 20 kHz output difference frequency that is converted to audio. However if someone were to transmit on 3580 kHz the difference frequency would also be 20 kHz. Because the receiver cannot reject image signals this interferes with reception of the desired signal.

Photo 2: A slimmer SDR in use.

The solution is to slightly adjust the receiver's local oscillator (for example, to 3603 kHz) and retune the desired signal on the computer. The desired 3620 kHz signal is now a 17 kHz difference, so can still be received. However the undesired 3580 kHz transmission is now 23 kHz away from the centre frequency. This is easily separable from the desired signal (6 kHz away) so will no longer interfere.

Of course if someone came up on 3586 kHz (3603 kHz – 17 kHz) the interference would reoccur and a further adjustment of the centre frequency (possibly to 3597 kHz) would be required to dodge it. Another shortcoming is that even if there are no signals on the receiver's image, there is still band noise, and this can make weak signals less readable. Hence this method is a compromise, though still adequate for all but the most crowded bands and the weakest of signals.

An extra band

Once the basic receiver is operating, an extra band is easy to add - if you have the parts. Candidates include 160 metres (making use of 1.843 MHz crystals) or 40 metres (either a 7.159 MHz crystal or 7.2 MHz ceramic resonator). Alternatively you could try WWV on 2.5, 5, 10 or 15 MHz or part of a shortwave broadcast band if you have suitable crystals or resonators.

The unit pictured here covers 80 and 40 metres. The latter was made possible by the use of 7.2 MHz ceramic resonators. These were obtained from the CW Operators QRP Club but a current commercial Australian supplier is not known. Alternatives include using the 3.58 MHz resonator on both bands by adding a switchable frequency doubler circuit or constructing a free-running oscillator.

Band switching is easy to arrange. Only the front end and crystal or ceramic resonator need to be switched. The antenna primary coils are wired in series so no switching was needed there.

Figure 2 shows the circuit diagram for the modified unit, with frequency agility and two bands.

A slimmer SDR

The circuit presented in Part One (and the refinements above) were designed more for a beginner. It avoided the use of toroidal transformers and USB power, which if wrongly connected, risked damaging the computer.

The unit in Photos 2 and 3 is an alternative. It is slightly less sensitive than the above design, has a stronger front-end and is USB powered. Not having the battery means a smaller case, making it more suitable for portable use.

Figure 3 shows the circuit. Because a passive diode detector is used, this version needs a front-end RF preamplifier. Overall gain is sufficient not to need an IF amplifier.

The local oscillator is fairly similar to the original circuit. Either a crystal or ceramic resonator can be used. A buffer amplifier has been added to sufficiently drive the diode detector. This may also assist stability if you wish to remove the crystal and make it a VFO to increase frequency agility or cover bands for which you lack crystals.

The most critical parts of construction are winding the toroid for the mixer and properly connecting the USB power connection.

The toroid requires three lengths of approximately 25 cm of thin enamelled copper wire (as used in transformers) to be twisted together. This can be done with one group of ends locked in a vice or pliers and the other end in a drill chuck. Slowly turning the drill while holding the wires taut should allow them to be evenly twisted.

Approximately ten turns are looped around the ferrite toroid and pulled to be reasonably tight (without damaging the wire or enamel insulation). A continuity tester or multimeter is used to identify each winding. These are connected to other components as per the circuit (the black dots identify one end).

The USB connection could use either a purchased plug or cut-up USB cable. This is used for power purposes only; the data in and out contacts are left unconnected. Pin 1 is +5 volts while Pin 4 is the ground.

Testing and operation is similar to the first SDR presented last month. A demonstration of this set appears on the author's YouTube channel.

Further work

Both circuits lend themselves to refinement and experimentation. Other frequencies can be covered by substituting a different crystal and front-end values. For example crystals around 2.3 MHz allow evening reception of the ABC's Northern Territory domestic service. Similarly a 6 MHz crystal includes a segment of the 49 metre band, including some frequencies used by Radio Australia.

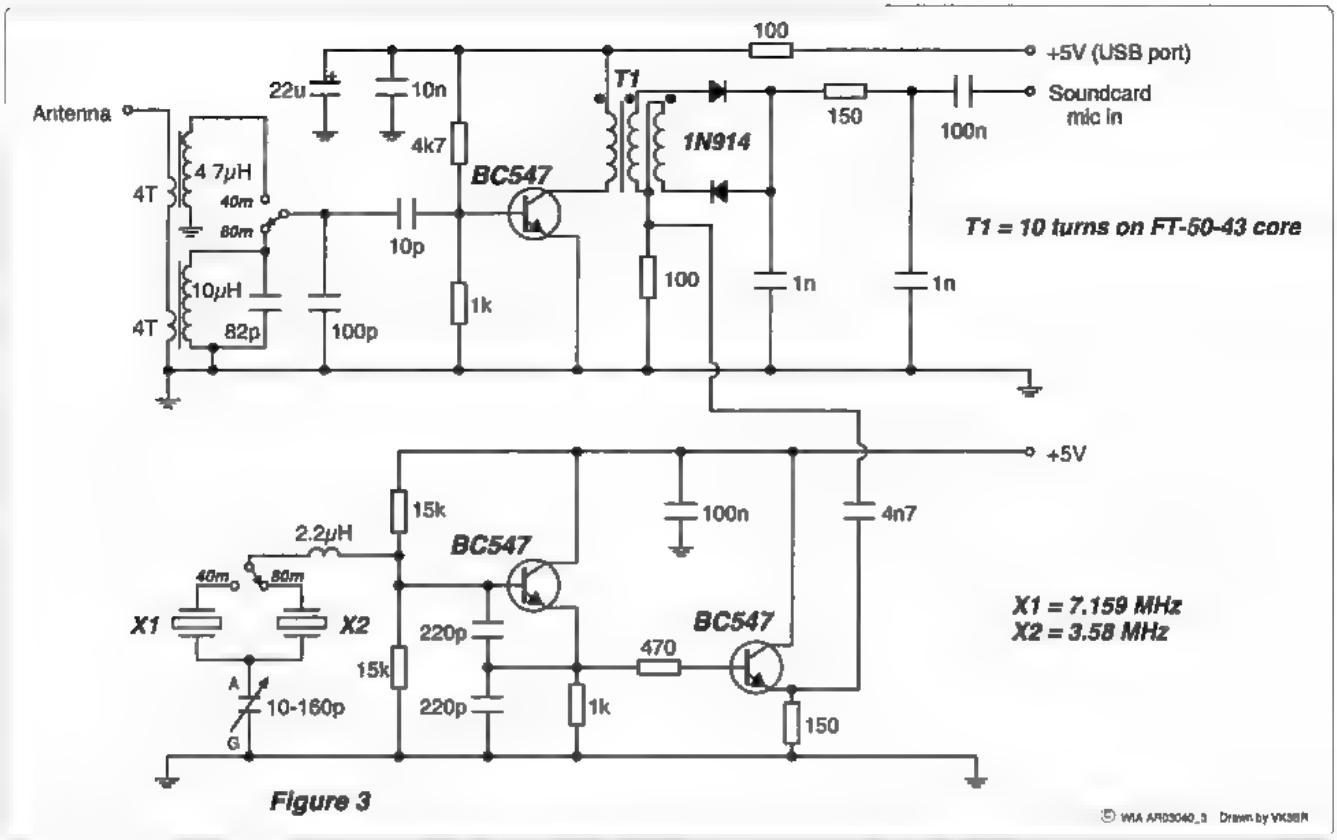


Figure 3: The slimmer SDR.

A frequency synthesizer, or bank of switched capacitors with 'channels' every 30 or 40 kHz, could provide easier 'resettability' than a variable frequency or ceramic resonator oscillator.

A crystal oscillator module, such as used on computer boards, can allow an extremely simple receiver to be built, but frequency flexibility is limited. Alternatively, those with a signal generator or QRP transmitter can skip building the local oscillator circuitry and just build the mixer and RF/IF amplifiers only to provide a receive function.

Conclusion

These articles have demonstrated that basic SDRs can be extremely simple to build. No computer programming or advanced electronics construction knowledge is required. Although the receivers here have limitations, on a performance for dollar basis they compare well with non-SDR designs of comparable simplicity.

Erratum

In Part 1 of this article, published in the September issue of *AR*, there are two small errors in the schematic (Figure 1 on page 31). Please note:

1. S and D labels of the MPF102 are reversed.
2. The IF amp transistor is a BC547 (not BC457).

Photo 3: A slimmer SDR inside.

AMSAT

David Giles VK5DG
vk5dg@amsat.org

ARISSat-1 has left the building

After months of delay ARISSat-1 has finally been tossed out of the ISS. Apart from a few issues ARISSat-1 is healthy and almost fully functional. As I type this (at the end of August) ARISSat-1 is working well. The battery has held up better than expected but has almost lost its capacity and may be going open circuit. By the time you read this it will be a daylight only satellite like AO-7 and DO-64. But the launch did not all go perfectly...

Launch problems

The launch proved to be troublesome. There was a live video feed for the launch and many commented on the AMSAT-BB mailing list about the rough handling the cosmonauts were giving it.

A copy of the video is available at the ARISSat website [1]. The cosmonauts noticed the 70 cm antenna was missing and this delayed deployment to sort this issue out. Nerves were frayed and there was a tense discussion during and after the launch. But as Bob Burunga WB4APR pointed out, this is a typical example of how difficult it is to work in space and that anything should be designed to be hit by a 150 kg man in a spacesuit. Tempers flared again with a press release from the Russia Today news service claiming that the 'cosmonauts will launch a microsatellite made entirely by Russian university students' [2]. The truth is otherwise – the Russian students built an experiment for it, the Russians took the 30 kg spacecraft to the space station, gave a name to it (Kedr) and Russian cosmonauts sent it into space.

Originally they were going to supply the spacesuit for it as well. Another case of not letting the facts get in the way of a good story. NASA has given more credit where credit is due and cited AMSAT and ARISSAT-1 in several news releases. In the end I feel that ARISSat-1 itself has the final word with its regular announcements of 'Hi this is ARISSat -1 amateur radio satellite RS01S'.

Another point to note is that because of the delays involved with launching ARISSat-1 they ran out of time to perform the main task of the space-walk. This was to relocate a boom structure to aid in future space-walks. If ARISSat-1 was the last job to be done then it is very likely it would still be on the ISS for another six months.

70 cm antenna

This has caused some controversy too. Is it missing? Is it connected but damaged? Is the transponder usable? Can command stations control ARISSat-1? There was some confusion here at the launch. The 70 cm antenna was reported as seen by some when ARISSat-1 was taken to the ISS but also reported as missing by others. Unofficially it seems the 70 cm antenna was attached to ARISSat-1 but has been damaged. There is a 4 cm stub of antenna blade embedded in the epoxy instead of the full 17 cm. Despite this the transponder has proven to be usable. The first report by Drew KO4MA was he was able to hear his uplink using only 1 watt. Others have reported using 40-100 W into 10 element antennas to give sufficient signal for SSB. So QSOs can be made but you may need a larger station to get into it. I have not tried it yet. The other good news is that command stations have control over ARISSat-1.

Battery

The silver-zinc battery is designed to last only six deep discharge cycles and has never been used in an application like ARISSat-1 where it will go through thousands of charge/discharge cycles. The main advantage of a silver-zinc battery is safety as well as high power density to weight ratio. It can be short circuited indefinitely and not catch fire. Its disadvantages are high cost, it does not like cold temperatures (needs 6 to 45° C), limited shelf life and very limited charge/discharge cycles. The designers of ARISSat-1 wrapped it in a thermal blanket to capture any heat it lost while charging and discharging. During 11th August the battery is suspected of losing the electrolyte in one or more of its cells, dramatically reducing its total capacity. By the end of August the battery capacity had dropped so far that ARISSat-1 was shutting down during eclipse. It looks like the battery will fail open-circuit so it can be used on all of the daylight passes. This has shown up in the telemetry in that the clock (Mission Elapsed Time or MET) has been resetting every time it comes out of eclipse.

So what works?

In summary – everything is or has been operational. The FM voice/ SSTV transmissions are loud and clear, the CW telemetry and BPSK are working and the Kursk experiment has been sent data. The SSTV pictures received around the world show the cameras and picture software are both doing a terrific job. The IHU is working and the battery management worked for as long as the battery had capacity. The transmit power is divided up as FM 250 mW, BPSK 100 mW, CW 25 mW and 125 mW for the transponder (a total of 500 mW).

Lifespan

One bit of good news from delaying the launch is that the ISS was boosted to higher altitude during June. To give some idea of the estimated lifespan James DeYoung N8OQ wrote an article 'Predictions of The Orbital Lifetime of ARISSat-1' in the March/April, 2011 issue of the AMSAT journal. He predicted a range between 129 and 152 days (with an uncertainty of +/- 10%)

after deployment with the ISS at an altitude of 370 km. If it was launched in February at a height of 352 km then the lifetime prediction range would have been around 94 to 110 days. So it looks like ARISSat-1 may still be up at Christmas and re-enter sometime during January/February.

Back in 1979 there was a newspaper cartoon featuring Chicken Little crying 'The Skylab is falling!' AMSAT are having their own Chicken Little competition for anyone to predict the date and time that ARISSat-1 will reach the point of no return.

Final Pass

If you have not done so yet, check the AMSAT website for the current location of ARISSAT-1 [3] and tune your radio to 145.950 MHz FM. It can be easily heard on a ¼ wave whip. They also have a 'How-to' page to receive all that ARISSat-1 has to offer. Also take a look at the collection of SSTV pictures at the AMSAT website [4].

References

[1] The main website for ARISSat-1 is *www.arissat1.org*

[2] *http://rt com/news/first-space-flight-satellite/*

[3] *http://www.amsat.org/amsat-new/tools/predict/satloc.php?lang=en&satellite=ARISSat-1*

[4] *http://www.amsat.org/amsat/ariss/SSTV/*

AMSAT-VK

AMSAT Co-ordinator
Paul Paradigm VK2TXT
email coordinator@amsat-vk.org

Group Moderator
Judy Williams VK2TJU
email secretary@amsat-vk.org

Website
www.amsat-vk.org

Group site:
group.amsat-vk.org

About AMSAT-VK

AMSAT-VK is a group of Australian amateur radio operators who share a common interest in building, launching and communicating with each other through non-commercial Amateur Radio satellites. Many of our members also have an interest in other space based communications, including listening to and communicating with the International Space Station, Earth-Moon-Earth (EME), monitoring weather (WX) satellites and other spacecraft.

AMSAT-VK is the primary point of contact for those interested in becoming involved in amateur radio satellite operations. If you are interested in learning more about satellite operations or just wish to become a member of AMSAT-Australia, please see our website.

AMSAT-VK monthly net
Australian National Satellite net

The net takes place on the second Tuesday of each month at 8.30 pm eastern time, that is 0930 Z or 1030 Z depending on daylight saving. The AMSAT-VK net has been running for many years with the aim of allowing amateur radio operators who are operating or have an interest in working in the satellite mode, to make contact with others in order to share their experiences and to catch up on pertinent news. The format also facilitates other aspects like making 'skeds' and for a general 'off-bird' chat. In addition to the EchoLink conference, the net will also be available via RF on the following repeaters and links.

In New South Wales
VK2RMP Maddens Plains repeater:146.850 MHz
VK2RIS Saddleback repeater: 146.975 MHz
VK2RBT Mt Boyne Repeater on 146.675 MHz

In Queensland
VK4RIL Laidley repeater on 147.700 MHz
VK4RRC Redcliffe 146.925 MHz IRLP node 6404, EchoLink node 44668

In South Australia
VK5TRM, Loxton on 147.125 MHz
VK5RSC, Mt Terrible on 439.825 MHz IRLP node 6278, Echolink node 399996

In Tasmania
VK7RTV Gawler 6 m. Repeater 53.775 MHz IRLP node 6124
VK7RTV Gawler 2 m Repeater 146.775 MHz. IRLP node 6616

In the Northern Territory
VK8MA Katherine 146.700 MHz FM

Operators may join the net via the above repeaters or by connecting to EchoLink on either the AMSAT-NA or VK3JED conferences. The net is also available via IRLP reflector number 9558. We are keen to have the net carried by other EchoLink or IRLP enabled repeaters and links in order to improve coverage. If you are interested in carrying our net on your system, please contact Paul via email. Frequencies and nodes can change without much notice. Details are put on the AMSAT-VK group site.

Become involved

Amateur satellite operating is one of the most interesting and rewarding modes in our hobby. The birds are relatively easy to access and require very little hardware investment to get started. You can gain access to the FM 'repeaters in the sky' with just a dual-band handheld operating on 2 m and 70 cm. These easy-to-use and popular FM satellites will give hams national communications and handheld access into New Zealand at various times through the day and night. Should you wish to join AMSAT-VK, details are available on the web site or sign-up at our group site as above. Membership is free and you will be made very welcome.

Over to you

Letter to the Editor

AR magazine

House fire at VK3FDAS, Edenhope Victoria

On 1/08/2011 between 7 pm 7.30 pm, our three dogs alerted us to a fire inside the roof of our house. It was burning and the flames outside were very dangerous.

Upon calling 000 and following instructions, experience previously learnt had taught to me to have a communications back up. I put out a Mayday call on 1146.950 Mt William repeater but sadly no-one came to my assistance. I then switched to the South Australian Mt Gambier repeater and again gave the Mayday call to which gratefully VK5FAJS Alan came to my assistance. Alan stayed faithfully throughout the entire event. We could have lost everything as we were extremely close to that thin blue line separating an unpleasant incident and a disaster.

After the CFA arrived, the OIC got up into the ceiling/roof area but his torch failed and I had to lend him one (oh dear). After all the fire was put out, we had a very restless night and next day I guess the shock really set in. If we had gone out that Monday night 1/08/2011 we surely would not have a house at all.

So it is with grateful appreciation to Alan VK5FAJS, the CFA and our three dogs we still have our home today.

Alan VK5FAJS – huge thanks for the assistance.

Sincerely grateful,

Den VK3FDAS

WICEN Vic

An exquisite situation… on short unloaded whip antennas and the effect of shunt capacitance at their base

Dale Hughes VK1DSH and Andrew Davis VK1DA/VK2UH

In a recently published article (Reference 1) there was a description of a typical high frequency whip antenna installation on a vehicle. The author concluded that the parasitic capacitance of a standard antenna base was the cause of significant signal loss and inability to tune on the lower HF bands, and that when the antenna base was replaced by a piece of wood that the problem disappeared and that the antenna could be used as expected. You would normally expect the shunt capacitance of a well made antenna base to be small, maybe a few tens of pF, and that this would have no impact on the operation of the antenna. The author's conclusion and solution caused considerable discussion among locals in Canberra as it seemed that the author's claims seemed unlikely to be true. There appear to be two alternatives:

1. The antenna base contained an inbuilt RF choke to provide a DC path to ground and this was shunting the lower HF frequencies to ground.
2. The author had made some sort of error, especially since no measurements of the base capacitance appear to have been made.

So what is the answer? Andrew checked with the author by email and it was confirmed that there was no in-built inductor present, so we had to look further…The analysis that followed is presented here.

First we need to understand what a 'short' whip is in an electrical sense. Short here means a small fraction of the operational wavelength; typically less than 10 % of a wavelength (see Reference 2). At both 40 m and 80 m, a 2.7 m whip is short; at 6.75 % and 3.4 % of l respectively. So it is 'short' and has certain electrical characteristics which dictate how well (or not) it will work. Such an antenna may be 'modelled' as shown in Figure 1.

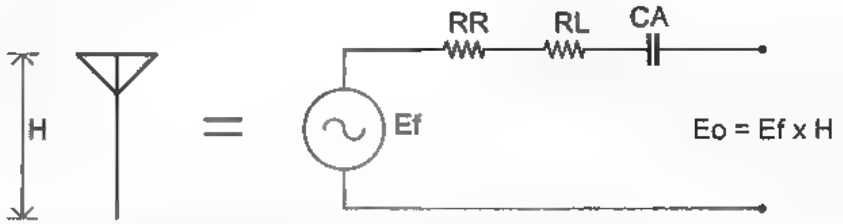


Figure 1: The electrical equivalent of a short whip antenna. RR is the radiation resistance, RL is the loss resistance and CA is the antenna capacitance.

The simplest equivalent circuit consists of a number of components:

1. *RL* is the 'loss' resistance of the antenna, made up of resistive and dielectric losses. This component depends on the details of the antenna location with respect to the vehicle, people, vegetation, insulation leakage resistance etc. and is typically about 15 ohms for a short whip antenna (see Reference 4). For most of the following discussion *RL* is ignored as it is not an essential component in the issue. However it should be reduced to a minimum if the antenna efficiency is to be maximised as the overall transmission efficiency of the antenna is proportional to *RR/RL* for this sort of antenna.
2. *RR* is the 'radiation resistance' which is the virtual resistance which accounts for power radiated when transmitting or power picked up when receiving. The value of *RR* is primarily dependent on the square of the ratio of antenna height to operating wavelength, that is, is frequency dependent. The power radiated from any antenna is $P = I^2/RR$.
3. *CA* is the antenna capacitance and, for a short whip, is determined by the basic geometry of the antenna - its height and diameter - and therefore is not frequency dependent. There are two points to note here:
   a. The equation given in the following section is only applicable to short whip antennas.
   b. The reactance of a resonant antenna, for example, quarter or half-wave is zero at its resonant frequency.

Values for *RR* and *CA* can be easily calculated for an ideal case, and while the case in question is not ideal, it is worth calculating the values as it will assist with the explanation of the problem.

From Reference 3, the radiation resistance of short vertical whip over a perfect conducting plane is given by:

$$RR = 40\pi^2\left(\frac{H}{\lambda}\right)^2$$

Similarly from Reference 3, the associated antenna capacitance (in pF) is estimated by:

$$CA = \frac{24.2H}{\log\left(\frac{2H}{A}\right) - 0.7353}$$

Where *H* is the antenna height in metres, λ is the operating wavelength in metres and *A* is the whip diameter in metres

Using the above equations, the values for *RR* and *CA* can be calculated for operating wavelengths of 40 and 80 metres and the values are shown in Table 1 along with the calculated antenna impedance.

	3.55 MHz	7.05 MHz	
RR	0.4	1.6	Ohms
CA	25.9	25.9	pF
XCA	1729	870	Ohms
Zant	0.4 - j1637	1.8 - j818	Ohms

Table 1: Calculated values of radiation resistance (RR), antenna capacitance (CA) and associated capacitive reactance (XCA) for a 2.7 m by 3 mm whip antenna at operating wavelengths of 80 and 40 metres.

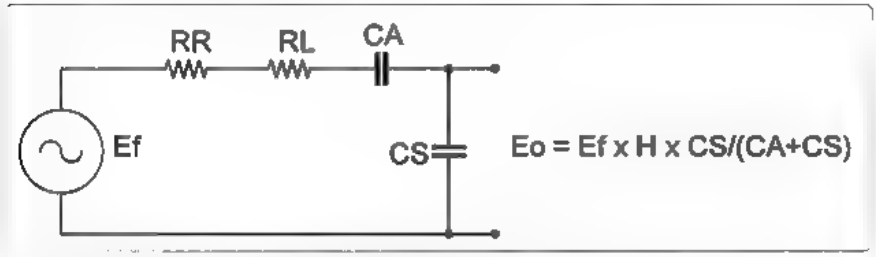


Figure 2: Equivalent antenna with additional shunt capacitance. The shunt capacitance may be from the antenna base, coaxial cable, the antenna tuning unit, etc. In all cases it has an adverse affect on the situation, especially since the radiation resistance is so low at the chosen operating wavelengths.

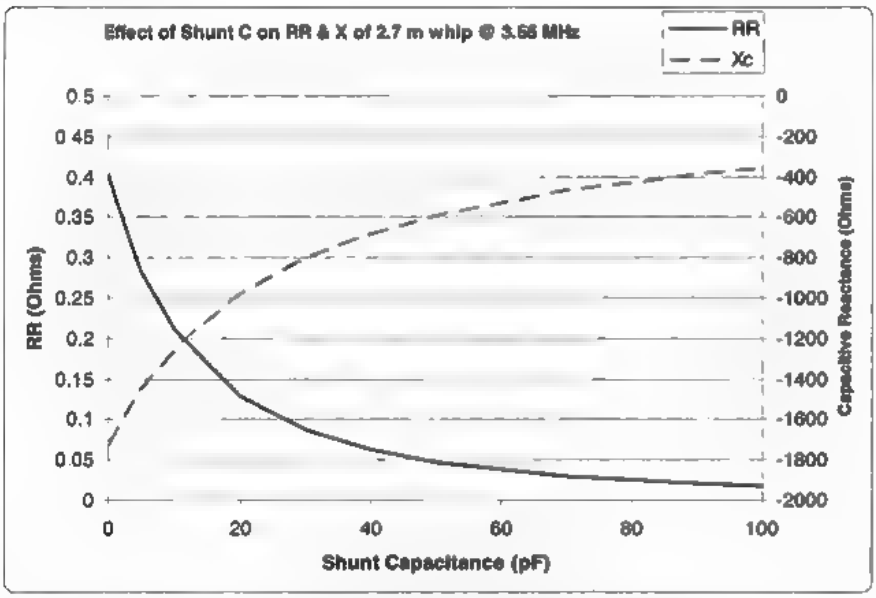


Figure 3: This graph shows the adverse effect of shunt capacitance on the radiation resistance (RR). Increasing shunt capacitance reduces the resistance seen by the transmitter. While the overall capacitive reactance decreases as the shunt capacitance is increased (a good thing), RR is reduced (a bad thing). Adding a shunt capacitance of 25 pF reduces the radiation resistance to approximately one quarter of the non-shunted value significantly reducing transmission efficiency. SWR is not plotted in this case as it is a more-or-less meaningless number of many thousands to one! The inclusion of loss resistance will reduce the SWR but will do nothing to improve antenna efficiency.

It can be clearly seen that the antenna equivalent consists of a very low radiation resistance in series with a small valued capacitor which has a correspondingly high capacitive reactance. This ignores the loss resistance (*RL*) which will be in series with both *RR* and *CA*, but its presence while possibly improving the apparent VSWR, will do nothing to improve the efficiency of the antenna. This clearly shows why electrically short whip antenna are so very inefficient; their convenience has a high price! To match such a load, any ATU must add significant series inductance to cancel the capacitive reactance of the antenna and the component losses within the ATU will absorb a significant fraction of the applied power.

The addition of any shunt capacitance at the antenna base, by the creation of a capacitive voltage divider, further reduces the effectiveness of the antenna, possibly by a significant amount. Figure 2 shows the equivalent circuit including shunt capacitance.

While the author of the original article does not provide any indication of what the shunt capacitance was, it is easy to imagine that it might be a few tens of pF; for example, two disks 60 mm in diameter, spaced by 5 mm using material with relative permittivity of 5 (typical of many plastics) forms a capacitance of about 25 pF. Even using coaxial cable can degrade the situation: typical RG58 cable has a capacitance of approximately 90 pF per metre. In short, the situation is *exquisitely* sensitive to any stray capacitance!

Doing some circuit analysis (see Reference 2, chapter 24 for the details of the required calculations) and some spreadsheet algebra it can be shown that the radiation resistance (*RR*) seen by the transmitter is reduced as shunt capacitance (*CS*) is increased, and that although the overall capacitive reactance decreases, this is clearly offset by the reduction on *RR*. To put it another way, the additional capacitance, in conjunction with the antenna capacitance is transforming the impedance in an undesirable way. Figure 3 shows the results of the calculations and the effect of the shunt capacitance.

Even if all shunt capacitance could be eliminated, connection directly to a 50 ohm transmitter or receiver would result in very poor performance due to the very high series capacitive reactance. Under these circumstances, placing the ATU at the base of the antenna with a short connecting cable was the correct decision. However,

a better solution is to load the antenna with some inductance which will increase the base impedance, significantly improving the efficiency of the antenna and ATU.

By way of comparison a similar calculation was done for a nominal 'quarter wave' whip antenna with a nominal base impedance of 35 ohms which is typical of a well tuned installation. Figures 4 and 5 show that even significant shunt capacitance has minimal effect on antenna performance. However such a HF antenna would be impractical for mobile use...

Conclusion

The original suggestion that there was a shunt inductance present was discarded once the author had checked and found no evidence of an inductor.

We have concluded that the author of the original article was correct to conclude that additional capacitance affected the antenna performance by making the impedance out of range for the ATU. However it was the *combination* of the antenna capacitance and shunt capacitance at the base rather than just simply the effect of additional shunt capacitance which created the adverse situation.

A short unloaded whip mounted on a vehicle which is intended to be used on the lower HF bands – 160 m, 80 m and 40 m – is an antenna which is exceptionally sensitive to shunt capacitance of any sort due to the small intrinsic capacitance of the antenna. Such an antenna will always perform more poorly than an inductively loaded whip of similar dimension. If there is *no* other choice and such a short whip must be used, then shunt capacitance must be reduced to a minimum and the poor antenna efficiency accepted as due payment for operational convenience!

While the calculations used in this article have focused on use at 80 m and ignore 'real world' losses, and actual SWR measurements of a similar antenna installation may show a more favourable situation; the fact remains that the radiation resistance of a short whip antenna will always be very low and that any additional loss resistance will simply absorb power – much like a dummy load. It is easy to get a perfect SWR with a dummy load!

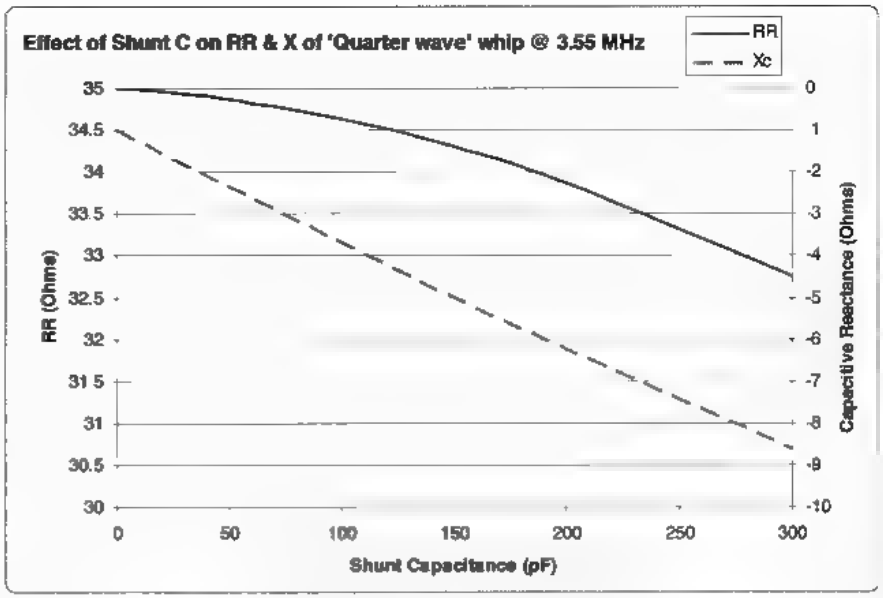


Figure 4: The effect of shunt capacitance on a nominal quarter-wave whip antenna with a typical base impedance of 35 ohms and a small amount of capacitive reactance (-j1 ohms). Even significant shunt capacitance has minimal effect on the antenna impedance. Similar results would be obtained for calculations assuming operation at 40 m.

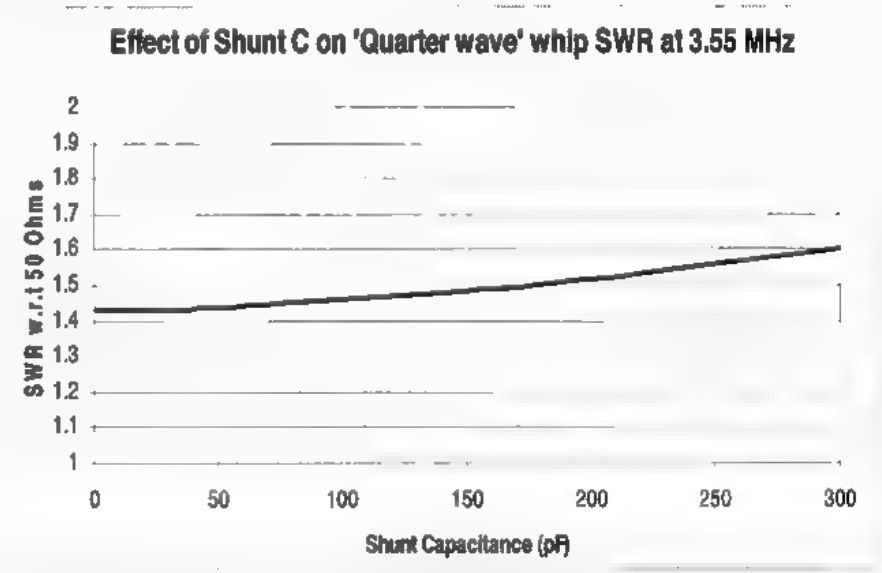


Figure 5: The data from Figure 4 plotted in the form of SWR, again showing the minimal effect of shunt capacitance.

References

1. Corlis, R. *A basic trap for young players.* Amateur Radio, August 2010, Volume 78, Number 8.
2. *The ARRL Antenna Book, 20th edition.* The ARRL Inc. ISBN 0-87259-904-3. In particular chapter 16: Mobile and Maritime Antennas.
3. Rohde, U. and Whitaker, J. *Communications Receivers DSP, Software Radios, and Design. Third edition 2001.* McGraw-Hill. ISBN 0-07-120168-8
4. Orr, W. I. *Radio Handbook 21st edition 1978.* Howard W Sams & Company Inc. ISBN 0-672-24034-3 See page 27.10.

VK3news VK3WI active in Remembrance Day Contest

Terry Murphy VK3UP

Photo 1: Tony VK3VTH, operating the station, and Terry VK3UP, doing the logging chores, at VK3WI during the RD contest.

Amateur Radio Victoria's office in Ashburton saw some HF activity for the first time when it activated VK3WI during the Remembrance Day contest, after the recent installation of a multi-band vertical on the roof of the premises.

The operators were Michele Grant VK3FEAT, Tony Hambling VK3VTH and Terry Murphy VK3UP. This was the first time the antenna was used from this location and judging by the excellent reports received, it looks like it has a great take off point. Keep an ear out for future activations from the ARV office. If you worked VK3WI during the RD contest, you have earned 10 points towards the 100 points required to qualify for the ARV Centenary Award.

Photo 2: Michelle VK3FEAT at the VK3WI operating desk during the RD contest.

VK3news Geelong Amateur Radio Club - The GARC

Tony Collis VK3JGC

Photo 1: Some of the working bee party.

The clubhouse roof replacement

For some time now there has been an awareness that the "flat" roofing on the club house was letting in water, causing problems with the ceiling below in the presentation room. This work was undertaken with a grant from the City of Greater Geelong and a generous donation by Ray Cowling VK3ACR towards the overall cost of replacement.

The Saturday morning, roofing day, started early; the delivery of the roofing materials had taken place at 7 am the day before. By 8 am the roofer and most of the dozen GARC members who had volunteered had turned up; they would be under the direction of the club's maintenance manager Dallas VK3DJ.

The previous week the guyed mast supporting the 40/80 metre dipole had been removed from the roof and a considerable amount of tree pruning had taken place. In addition the east tower had been dismantled, in part to accommodate a new rotator, although the intention was to also replace the steel cable on both Nally towers. In addition to assisting the roofer, a petrol driven chipper was in almost permanent use, reducing the tree pruning's to mulch for the front garden. Around early afternoon Jenni VK3FJEN set up a barbeque for the working bee team, which was gratefully received.

The weather was remarkably good, for the most part there was warm sunshine and a light wind. Bob VK3CSR had brought his trailer along, which was duly filled with rubbish destined for consignment to the local tip. The old roof tiles were stowed away at the side of the hut for future replacement of rusted ones on the lounge roof and also to, possibly, provide an awning at the side of the club house for an undercover barbeque area. Work finally finished at around 3 pm, the end of a very long day, at the end of which the front of the club house was left in pristine condition.

Photo 2: The shiny new roof on the Storrer Street clubhouse.

VK5news Adelaide Hills Amateur Radio Society

David Clegg VK5KC

Photo 1: Eric VK5LP with David VK5KC, Rob VK5RG and Barry VK5BW.

The Club shack is nearing completion and was officially opened on 3 September by Christine Taylor VK5CTY, wife of Geoff VK5TY, who was the longest serving club President. A longer report in next month's notes.

Recently several members made the trip to Meningie to catch up with Eric VK5LP. Eric lives in a nursing home at the Meningie Hospital, but makes the daily trip to his nearby house in his electric wheelchair. Eric kindly donated some equipment to the Club for use in the shack. Eric will be remembered by many as he wrote the VHF – UHF notes in *Amateur Radio* for 30 years. Our sincere thanks go to Eric for his kind donation. Many contacts have been made already on the Kenwood TS-680S.

The August meeting was a show and tell night. Many members displayed their projects, both current and from a past time. The September meeting will be a talk on vector analysis by Barry VK5BW and Jim VK5TR. October will be the annual construction night, with another great project from Graham Dicker VK5ZFZ.

A reminder now of the annual Hamfest to be held on Sunday, 20th November at the Goodwood Community Centre. Doors open at 9.30 am. All the usual vendors will be there selling both new and pre-loved goods. ALARA and the North East Radio Club will make sure we do not go hungry.

Sunday, 4th December will be the club Christmas get together at the Mt Osmond Golf Club.

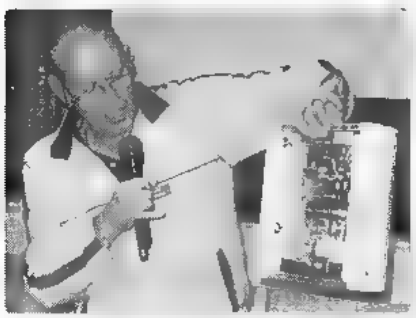
Richard Southcott, the club Treasurer will take payment in full for anyone wishing to attend.

Help is needed from members as we are about to take over assembly and distribution of the VK5JST aerial analyser. This was previously done by the South Coast Radio Club. They reluctantly have to let it go to another Club. AHARS will need volunteers to purchase parts, assemble the kits and despatch to purchasers. The committee is looking to the membership to help out with the project.

Photo 3: Tony VK5FTAE and his portable antenna.

Photo 4 Alf VK5AJF with his loop antenna.

Photo 2: Iain VK5ZD with his 3.4 GHz transverter.



ADELAIDE HILLS AMATEUR RADIO SOCIETY

Annual Buy and Sell Day

Sunday November 20th 2011

Goodwood Community Centre, Rosa St Goodwood

New and pre loved equipment for sale.

Doors open at 0900, selling commences at 0930.

Contact David Clegg VK5KC to book a table

www.ahars.com.au

Cape Schanck activated for ILLW 2011

Joe Magee VK3BKI

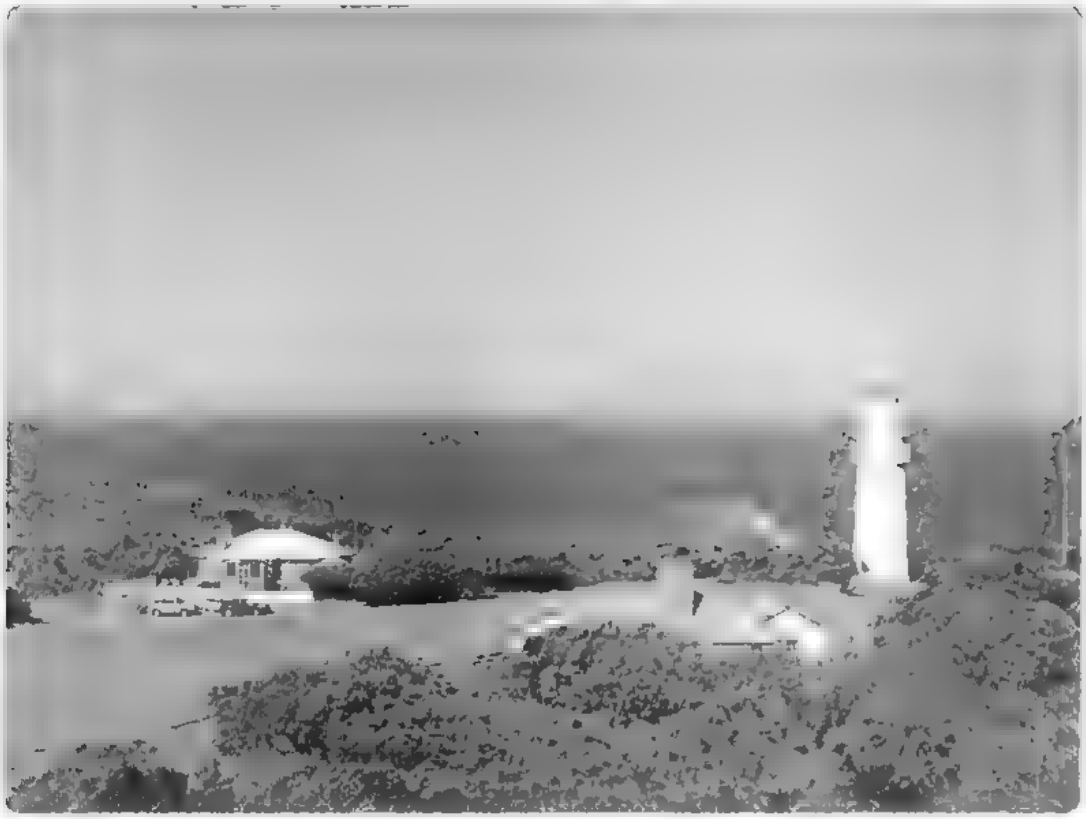


Photo 1: Cape Schanck Lighthouse and the Keepers Cottages

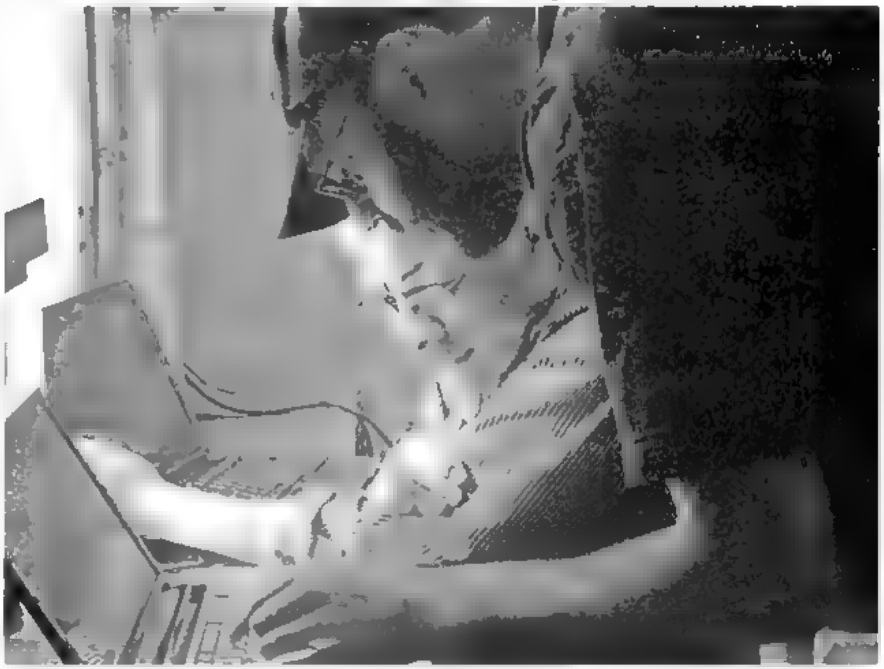
As I pen this I am at 10,000 metres (35,000 ft for the metrically challenged), crossing the Arafura Sea, headed for Tokyo for a two week visit. For work, of course. The excitement of this trip was not as high as the trip undertaken last weekend to the beautiful Cape Schanck, when the ILLW was in full swing.

Photo 2: Raising the mast for 2 m and 70 cm.

The participants were as usual, Carl VK3EMF, Damian VK3KQ and myself Joe VK3BKI. We were host to a number of visitors, John VK3PZ And his XYL Susan VK3FSSB. We also had a number of other visitors on the Saturday, including a couple of very young children and parents of course, along with Carl's brother John.

Last year Damian had avoided doing any work putting up the antennas by sitting on a nearby hill watching the comedy until it finished and then arrived as the last tools were being stowed.

Photo 3: Joe VK3BKI and Damian VK3KQ calculating the satellite paths.



I took a more creative approach this year by double booking myself and so arrived after 11.30 pm. This was noted by Carl as he was socially bound to wait until I arrived before retiring for the evening. Loud and long were the complaints.

Cape Schanck is known for its radio noise and this year did not disappoint, with levels staying high all over the HF bands until the morning we were leaving. But this year we had a surprise in store for Cape Schanck. Early Saturday morning, the radios were manned and both Carl and Damian did a splendid job of pulling stations from the noise and much fun was had and poked during this period.

Sue and John arrived, bringing with them glorious weather. Normally the Cape is described as beautiful but freezing. This weekend the weather was magnificent. Wall to wall blue sky and the temperature was in the high teens.

Saturday afternoon came and we made ready the noise beating antenna for Cape Schanck. No, it was not Carl's long promised and much designed magnetic loop. Instead we pulled out the Arrow antenna system and handheld radio. This antenna is a crossed Yagi for 70 cm and two metres.

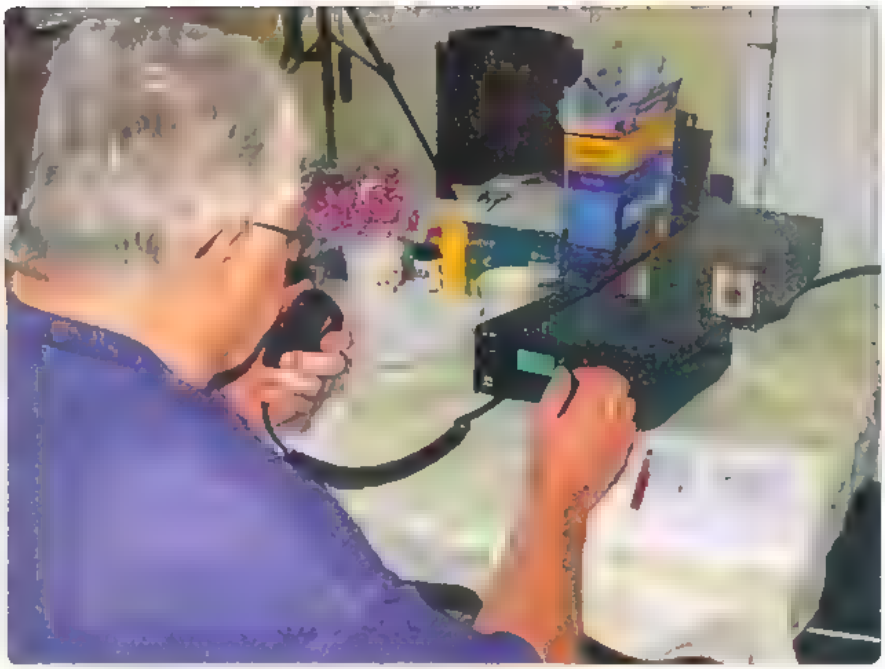


Photo 4: Carl VK3EMF working the Lighthouses.

Photo 5: Is it a bird - is it a plane - No it's AO51

Photo 6: Possible World First for the ILLW, Carl VK3EMF contact through AO51.

This system was used to talk into AO51. This satellite is in a low earth orbit and is accessible by a hand held setup. We had contacts into VK2, VK1 and VK6. A first for the ILLW? We are fairly sure that it is a first for Cape Schanck. Copy was armchair mostly, with a bit of QSB but the overall glee from being successful was magnificent.

So there it is. Another hilarious weekend and perhaps a world first. Who could ask for more?

VI6CHOGM

Scouts on air

The Scout Member Amateur Radio Team is hosting a special amateur radio event using the callsign VI6CHOGM

Friday 28 to Sunday 30 October

The Scout Member Amateur Radio Team (SMART) in Perth has secured the special event callsign **VI6CHOGM** to celebrate the 22nd Commonwealth Heads of Government Meeting which takes place in October, 2011 in Perth, Western Australia

The activity is at the Peter Hughes Scout Communications Centre, in Perth, and will operate from the first tick-o-the-clock on Friday morning 28th October to midnight Sunday 30th October (Western Standard Time, UTC +8).

The aim of the activity is an on-air continuous presence for 72 hours, making radio contact with as many amateur radio operators in as many countries as possible.

A special QSL card is being produced, and every contact will be acknowledged via the Bureau.

Locals have been invited to attend either as participants or as onlookers. SMART will be running an 'open house' over the weekend Tea/coffee is available via donation to the honesty box. A small range of other refreshments will be on sale as will BBQ packs at meal times.

Please visit *http://vi6chogm.com/* for more information and to find out how to participate.

Bob Bristow VK6POP

Scout Member Amateur Radio Team

IARS activates Point Perpendicular Lighthouse VK2AMW for the ILLW

Rob McKnight VK2MT

Point Perpendicular Lighthouse was built in 1898 and is located on the northern entrance to Jervis Bay, on the south coast of NSW. It was decommissioned and replaced by a more modern solar-powered beacon back in the early 1990s. However , for many years now 'Lighthouses of Australia' has been granted special permission to relight the original lighthouse for the ILLW, while at the same time the Illawarra Amateur Radio Society (IARS), in conjunction w th the Blue Mountains Amateur Radio Club (BMARC), have for many years been also 'lighting' the RF from the site!

About 15 members attended the site from Friday through to Sunday, with eight hardy souls toughing it out in the old Lighthouse Keeper residence. Under the IARS callsign VK2AMW, two stations were put on the air using a Kenwood TS-2000X and a Kenwood TS-440 with four different antennas available, they being a G5RV, two helically wound verticals on 40 m and 80 m, plus a 13 m tall non-resonant vertical fed from an SG-230 antenna coupler which was remotely controlled from the operating position.

Much media publicity had let the local communities know of the lighting of the old girl and there was a steady stream of visitors on both days, plus quite a few on Saturday night, when the piercing beams from the light's Fresnel lenses were mesmerizing as they rotated around hitting the sea mist coming up from the Pacific Ocean down the sheer-walled cliffs 100 metres below, the reason for the point's name.

From this high coastal vantage point, a total of 265 contacts were made. Just about all Australian and New Zealand Lighthouse stations were contacted, plus many VK, ZL and overseas stations were worked including France, Italy and the US.

Photo 1: The Point Perpendicular lighthouse in silhouette

All the bands from 20 to 80 metres were used and they also provided very good propagation making the weekend even more enjoyable; plus the RF quiet environment was an absolute pleasure!

Overall, it was a really fun and friendly event to be involved in and our two clubs will definitely be involved in the future.

Photo 2. At Point Perpendicular – the old, on the right, and the new, on the left.

Contests

Phil Smeaton VK4BAA

Contest Calendar for October 2011 – December 2011

October	1/2	**Oceania DX Contest**	**SSB**
	8/9	**Oceania DX Contest**	**CW**
	22	**Jack Files Memorial Contest**	**SSB**
	22/23	ARRL International EME Competition	CW/SSB
	29/30	CQWW DX Contest	SSB
	29/30	CQWW SWL Challenge	SSB
November	12/13	Japan International DX Contest	SSB
	12/13	Worked All Europe DX Contest	RTTY
	19/20	ARRL International EME Contest	All
	26/27	**Spring VHF/UHF Field Day**	**CW / SSB / FM**
	26/27	CQWW DX Contest	CW
	26/27	CQWW SWL Challenge	CW
December	2/4	ARRL 160 m Contest	CW
	4	RTTY Melee	RTTY
	10/11	ARRL 10 m Contest	CW/SSB
	17	OK DX RTTY Contest	RTTY
	Dec 2011 to Jan 2012	**Ross Hull Memorial VHF Contest (VHF/UHF)**	**CW / SSB / FM**

Welcome to this month's Contest Column. A plethora of contest results this month, so without much more ado...

Oceania 2010 contest results

The 2010 results for the flagship contest of this region have been recently issued. The results for the VK phone section are:

Single Operator, All Band, Low Power

VK8NSB 278,720; VK4MIA 185,459; VK4ADC 150,308; VK3IO 122,346; VK4MDX 106,446; VK4CAG 106,403; VK5NPR/3 93,024; VK4ATH 79,950; VK2HBG 69,360; VK4PTO 52,245; VK7JGD 46,620; VK6HZ 32,528; VK7FWAY 32,340; VK4HEC 23,855; VK4XES 23,310; VK4GQ 20,345; VK3ZPF 20,191; VK7ARN 12,987; VK3NRW 11,984; VK4CCV 11,520; VK6HAD 9,702; VK1MAT 8,505; VK3AKT 7,954; VK3FASW 6,720; VK6FDX 5,406; VK3FDI 5,348; VK4BL 4,674; VK3KTM 4,225; VK3TDX 2,835; VK4KLC 2,664; VK2POP 1,443; VK3VT 390.

Single Operator, All Band, High Power

VK6DXI 1,548,790; VK7GN 705,600; VK4GH 511,285; VK3TZ 321,216; VK4BUI 289,640; VK2IM 194,955; VK3AVV 130,734; VK8JM 93,328; VK1HW 58,824; VK2ACC 50,320; VK3AFK 38,352; VK3QI 28,645; VK3DOG 28,475; VK3AVZ 902.

Single Operator, Single Band, Low Power

80 m VK3FCAC 320; 40 m VK3VTH 48,510; 40 m VK4VDX 20,865; 40 m VK4KRX 9,250; 40 m VK3FBBA 5,320; 40 m VK4JAZ 4,400; 20 m VK4AN 46,854; 20 m VK8AA ,6351;15 m VK4LDX 122,838.

Single Operator, Single Band, High Power

40 m VK3GK 330,960; 20 m VK7ZE 460,167; 20 m VK2XN 171,972; 20 m VK2EKY 306; 15 m VK4FJ 76,704; 15 m VK2ZQ 23,936.

M/2

VK4KW 7,044,877; VK4HH 1,627,717; VK2AWA 488,392; VK2CL 320,458.

M/S

VK6NC 2,810,295; VK4HAM 1,672,386; VK4TI 1,170,864; VK3HR 113,360; VK2HAK 34,780; VK2IO 34,060; VK3ALB 24,726; VK2GR 912.

A total of 1092 logs were processed which is a new record and a good step up from the previous record of 999 logs in 2009. The overall number of QSOs logged in 2010 is approximately 21% greater than that logged in 2009. This increase can be attributed to the growth in participation as well as improved conditions on the higher bands. As the top entrant from Australia in the SSB Single Operator All Band category *and* the top entrant from Australia in the CW Single Operator All Band category, VK6DXI wins both the Single-Op ALL Band PHONE Plaque and the Frank Hine VK2QL Memorial Trophy. Excellent stuff!

The results for the VK CW section are:

Single Operator, All Band, Low Power

VK4TT 361,036; VK3TZ 233,680, VK2GR 115,928; VK3CTN 56,628; DF4TD/VK5 17,732; VK4XY 11,045; VK4FJ 2,592; VK2EL 1,050.

Single Operator, All Band, High Power

VK6DXI 4,046,136; VK2IM 2,393,588; VK3TDX 2,086,030; VK7GN 1,037,760; VK3IO 826,086; VK2PN 566,384; VK4BUI 477,214.

Single Operator, Single Band, High Power

160 m HP VK3HJ 4,800; 15 m HP VK4SN 206,336.

Single Operator, Single Band, Low Power

80 m LP VK2CCC 324,120; 40 m LP VK8AV 51,330; 20 m LP VK4TJF 29,949; 20 m LP VK3QI 24,300; 20 m LP VK5SW 285, 15 m LP VK4AN 292,336; 15 m LP VK4DX 79,002; 10 m LP VK4KW 168.

The Australia Club Plaque is awarded to the local club from Australia with the greatest number of member stations participating in the contest. In order for a club to be eligible there must be at least five logs submitted by member stations, with each log containing a minimum of 50 valid QSOs. Only the Eastern and Mountain District Radio Club met this requirement in 2010, with a total of eight logs submitted (VK3AKT PH, VK3AVV PH, VK3DOG PH, VK3FBBA PH, VK3QI PH, VK3TZ PH, VK3QI CW, VK3TZ CW). The rules state that there must be three or more clubs competing in order for the plaque to be awarded but the plaque sponsor (VKCC) has decided to waive this requirement for the 2010 contest.

The 75th Oceania DX contest will be held on the first two full weekends of October, 2011 as follows:

PHONE: 0800 UTC Saturday, 1 October to 0800 UTC Sunday, 2 October.

CW: 08:00 UTC Saturday, 8 October to 0800 UTC Sunday, 9 October.

More information about the contest, including the rules, is available from the Oceania DX Contest web site at www.oceaniadxcontest.com Specific inquiries should be addressed to *info@oceaniadxcontest.com*

CQWW SSB 2010 contest results

Single Operator

VK3TDX 1,435,790; VK4EMM 1,109,016; VK7GN 158,158; VK3AVV 156,692; VK4CAG 134,575; VK4GH 36,418; VK1MJ 17,982; VK2WAY 12,388; VK2ACC 9,729; VK2ERP 9,447; VK4QH 3,434; VK4BUI 10 m 17,010; VK3AVZ 211,550; VK7AD 145,632; VK5JDS 6; VK8AA 40 m 215,280; VK2KJJ 120; VK4ATH 135,315; VK4BL 124,016; VK2HBG 40,290; VK6HAD 23,562; VK7FWAY 21,924; VK4XES 20,790; VK6FDX 17,010; VK4TU 15,576; VK3NRW 12,172; VK4QC 10,797; VK2PDX 9,804; VK4VDX 6,270; VK5MWH 6,000; VK2NR 4,752; VK2IO 3,168; VK2GR 320; VK6GD 240; VK4FJ 15 m 102,432; VK3VTH 40 m 9,159; VK1SV 80 m 110; VK7XX 116,725; VK3FM 63,720; VK4NEF 11,648; VK4LDX 299,250; VK1OO 20,800; VK6DXI 1,380; VK4EJ 15 m 85,170.

M/S

VK6NC 2,680,507; VK2GGC 181,170.

M/2

VK4KW 6,999,635; VK1CC 3,121,248; VK4HH 450,660.

M/M

VK4UC 3,225,156; VK3FRC 302,868

CQWW Multi-Op rule changes

The CQWW Contest Committee has recently announced a rule change for multi-ops in CQWW. When two or more transmitters are present on a band, either a software or hardware device *must* be used to prevent more than one signal at any one time. Interlocking two or more transmitters on a band with alternating CQs (soliciting contacts) is not allowed. Those who have the capabilities of creating such a station that allows alternate CQ's on the same band and the skills to use it efficiently might be somewhat miffed as they are no longer permitted to do it. So, what is behind this rule?

The rule is in place to ensure that two signals cannot occur simultaneously on a given band. Dueling CQs is already forbidden in the rules for many reasons. It is quite apparent in the recent CQWW and RDXS results with disqualifications that many stations are not managing one signal on a band properly. It is encouraging to see the sponsors of the RDXC taking measures to discover and discourage the cheats. In addition to the RBN monitoring they added a requirement in their rules that cabrillo logs show the QRG for each QSO for any entrant who is vying for a top spot. Use of cluster is now a busted flush, skimmers and the like are not yet detectable but ambitious cheats looking for a highly placed finish will be detectable by their behaviour patterns.

I suspect that they introduced this new rule to avoid overcrowding bands with a lot of strong signals. There is only so much spectrum available for us. In contests it is much less than we would like to have. Those who are capable of alternating CQs on the same band in fact occupy two frequencies. Usually they are big gun MS or MM with big antennas who seldom resort to S&P unless the conditions dictate. That approach leaves no space for little pistols to call CQ and get heard. Look at the Reverse Beacon Network data and you can readily see how much alternate CQing is already going on. If you care to use that data as an index to SDR recordings, you could positively prove violations of two signals at a time or alternate CQing.

So, if a running station gets an answer to their CQ on a frequency, can they launch a CQ on another frequency while the other station is transmitting? That is not 'alternating CQs'. In fact, it was standard operating procedure at WRTC-2010. But, if CQWW CC did not want this type of activity, the rule should apply to all categories, not just multi operator stations? I contest for fun. If I can win even better but I do it with integrity and it is not a win at all costs attitude. When the fun stops the radio on/off button is pressed and it is time to move on to another hobby.

Open Logs

Private logs may be a thing of the past if and when certain contest organisers require live stream logging in the future. This requirement might exclude a whole subset of contesters who simply do not have the facility to do so, of course. An argument as to why to keep a log private might have a lot more to do with one's region having typical openings on bands most would assume closed yet known only to the most seasoned contesters. Perhaps the DX clusters, skimmers and so on have made this once interesting knowledge of band strategy an advantage of the past, but I can understand why certain contesters would like to keep their plans their own.

However, it has been mooted that UBNs might go public too. The UBN report is a private tool provided by the contest sponsor,

which enumerates where a hiccup or two might have occurred in his contest. It is a good tool which allows me to learn from my mistakes. I prefer my mistakes to be my own and a learning experience for me and nobody else. But what is the big deal? We all know that we all make mistakes. No need to keep that private. It is like hanging out on a nude beach. Unless your UBN is much, much bigger than everyone else's, nobody will even notice. Making your log public is a condition of entry for some contests. In essence, they are asking you if it is OK to make your log public, and I guess that you are saying 'no' by not submitting it.

RDXC 2011 Results

VK6AA SOAB-MIX 9,542; VK4EMM SOAB-MIX 3,759; VK2IM SOAB-CW 3,773; VK4IU SOAB-SSB 83; VK8AV SOSB 40 m 657; VK4TT SOSB 40 m 11.

Starting in 2011, the organisers of the RDXC implemented SDR recordings of the Top Ten stations in each category to check for rule violations. After the SDR recordings were checked, it transpired that a number of MS and M2 stations broke contest rules by having two signals at the same time on the same band for many hours. This discovery led to the disqualification of the following stations: RT3F, RF4M, RF8C, RA3DXU and RK4WWQ. It is rumoured however that in the 2012 Russian DX test 'complete stereo recordings of every QSO in the contest' will be required. I wonder how many entrants will bother?

Anyway, the good news is that not one VK station appeared on the 'naughty boy' list!

JIDX 2010 SSB contest results

VK2ACC AB 3,212; VK3AVV AB 3,120; VK2HBG ABL 910; VK3NRW ABL 132; VK3ZGP ABL 4; VK4NEF 10 m L 10,062; VK4LDX 15 m L 9,680; VK4FJ 15 m L 9,114; VK4QH 20 m L 450; VK3ZPF 20 m 88.

Trent VK4TI - Director of WIA

Peter Young VK3MV has resigned as a director of the WIA and the Board has appointed Trent Sampson VK4TI a director for the balance of Peter's term.

Trent is a keen contester and a member of the VK Contest Club, but he is also a member of the VK4KW Lambda Contest Group team. I have had the pleasure of contesting with Trent for some years now – and the additional pleasure of giving him a whipping as opposition too! All the best in your new role Trent, as I am sure that your dynamic style will add great value to the future endeavours of the WIA.

If you have any contest related material for inclusion within the column, topics that you would like covered or even some experiences and pictures you would like to share, then please feel free to get in touch via *vk4baa@wia.org.au* See you on the bands. 73 de VK4BAA.

Spring VHF-UHF Field Day 2011

Contest manager: John Martin VK3KM

Dates: Saturday and Sunday 26 and 27 November 2011

Duration in all call areas other than VK6: 0100 UTC Saturday to 0100 UTC Sunday.
Duration in VK6 only: 0400 UTC Saturday to 0400 UTC Sunday.

Please note that there is now a 3 hour difference between the eastern states and Western Australia, due to daylight saving time in the east.

Sections

A: Portable station, single operator, 24 hours.
B: Portable station, single operator, 8 hours.
C: Portable station, multiple operator, 24 hours.
D: Portable station, multiple operator, 8 hours
E: Home station, 24 hours.
F: Rover station, 24 hours.

Operating periods: Stations entering the 8 hour sections may operate for more than 8 hours, and nominate which 8 hour period they wish to claim for scoring purposes.

Entering more than one section: If a portable station operates for more than 8 hours, it may enter both the 24 hour and 8 hour sections. If the winner of a 24 hour portable section has also entered the corresponding 8. hour section, his log will be excluded from the 8 hour section.

If a portable or rover station spends part of the contest period operating from his home station, he may also enter the home station section.

Two operators: If two operators set up a joint station with shared equipment, they may choose to enter Section A or B as separate stations under their own callsigns, or Section C or D under a single callsign. If they enter Section A or B, they may not claim contacts with each other.

Multi-operator stations: Portable stations with more than two operators must enter Section C or D. Operators of stations in Section C or D may not make contest exchanges using callsigns other than the club or group callsign.

Rover stations: The Rover section is for all portable or mobile stations that operate from more than two locator squares or change locator squares more than twice.

General Rules

One callsign per station. Operation may be from any location. A station is portable only if all of its equipment is transported to a place which is not the normal location of any amateur station. Portable stations may change location during the Field Day provided the station is dismantled and reassembled each time it moves. You may work stations within your own locator square. Repeater, satellite and crossband contacts are not permitted

Except for CW, no contest operation is allowed below 50.150 MHz. Recognised DX calling frequencies must not be used for contest activity. Suggested procedure for SSB stations is to call on .150 on each band, and QSY up to make the contest exchange.

Contest Exchange

RS (or RST) reports, a serial number, and your four digit Maidenhead locator. The Maidenhead locator is optional if it has already been exchanged in a previous contact during the Field Day and neither station has moved since then.

Repeat Contacts

Stations may be worked again on each band after three hours. If either station is moved to a new location in a different locator square, repeat contacts may be made immediately. If the station moves back into the previous locator square, the three hour limit still applies to stations worked from that square.

Band	Locators + Activated (10 points each)	Locators + Worked (10 points each)	QSOs x (1 point each)	Multiplier =	Band Total
6 m	10 +	40 +	40 x	1 =	90
2 m	10 +	40 +	30 x	3 =	240
70 cm	10 +	40 +	20 x	5 =	350
Etc					
Overall Total					680

Logs

Logs should cover the entire operating period and include the following for each contact: UTC time; frequency; station worked; serial numbers and locator numbers exchanged.

Scoring

For each band, score 10 points for each 4 digit locator square in which your station operates, plus 10 points for each locator square worked, plus 1 point per contact. Multiply the total by the band multiplier as follows:

6 m	2 m	70 cm	23 cm	Higher
x 1	x 3	x 5	x 8	x 10

Then total the scores for all bands.

Cover Sheet

The cover sheet should contain the names and callsigns of all operators; postal address; station location and Maidenhead locator; the section(s) entered; the scoring table; and a signed declaration that the contest manager's decision will be accepted as final.

Please use the following format for your scoring table above. In this example the operator has operated from one locator and worked four locators on each band.

A blank cover sheet, with scoring table, is available on the Field Day page of the WIA web site.

Entries

Paper logs may be posted to the Manager, VHF-UHF Field Day, 3 Vernal Avenue, Mitcham, Vic 3132. Electronic logs can be e-mailed to *vhfuhf@wia.org.au* (please note the change of email address). Acceptable log formats include: ASCII text, RTF, DOC, DOCX, XLS, XLSX, MDB, PDF, or any Open Document format. Logs must be received by **Monday, 12 December 2011.** Early logs would be appreciated.

Field Day Web site:

http://www.wia.org.au/members/contests/vhfuhf/

This site includes the rules for the next Field Day, rules and results of all past VHF-UHF Field Days, cover sheets and scoring tables, and other information.

WIA VHF-UHF FIELD DAY

Contest date:

Station callsign:

Section entered:

- ☐ **A** Single operator 24 hours
- ☐ **B** Single operator 8 hours
- ☐ **C** Multi operator 24 hours
- ☐ **D** Multi operator 8 hours
- ☐ **E** Home station 24 hours
- ☐ **F** Rover station 24 hours

If entering more than one section, please use a separate copy of this sheet for each section.

Names and callsigns of all operators:

For Section B or D, time period to be scored:

Postal address for notification of results:

Postcode:

The station operated from the following grid locators:

The station was operated in accordance with the rules of the contest and in the spirit of fair and friendly competition. I/We agree to accept the Contest Manager's decision as final.

Signed:

SCORING TABLE

Band	Locators Activated 10 points each		Locators Worked 10 points each		QSOs made 1 point each	Total	Band Multiplier		Band Total
50 MHz		+		+		=	x 1	=	
144 MHz		+		+		=	x 3	=	
432 MHz		+		+		=	x 5	=	
1296 MHz		+		+		=	x 8	=	
2.4 GHz		+		+		=	x 10	=	
3.4 GHz		+		+		=	x 10	=	
5.7 GHz		+		+		=	x 10	=	
10 GHz		+		+		=	x 10	=	
24 GHz		+		+		=	x 10	=	
47 GHz		+		+		=	x 10	=	
Higher		+		+		=	x 10	=	

FINAL TOTAL =

Jack Files Memorial Contest - 22 October 2011

Derek Toreaux VK4MIA, Contest Manager, President Ipswich & District Radio Club
www.jackfilesvk.blogspot.com

The Jack Files Contest is sponsored by the QAC and will be administered by the Ipswich & District Radio Club.

Aim of the Contest

The object is for amateurs to work as many other amateur stations, and particularly as many different VK4 shires, towns and as many different states and territories as possible within each one hour block of the contest.

Date: The contest date for 2011 is 22 October 2011.
It runs for six hours: 0800 UTC – 1400 UTC in six one-hour blocks for the purpose of duplicate contacts.

Power Output: Limited as per your licence specifications i.e.: Foundation 10 W, Standard 100 W, Advanced 400 W.

Band of Operation: Contest is open ONLY on 80 metres: **3.550 MHz – 3.700 MHz** to put all licence grades on an equal footing.

Mode: Mode is SSB ONLY. Previous years have seen the decline in the use of CW and due to lack of participation and log submission this mode has now been removed.

Categories: Single Operator or Club Station.

Exchange: Non-VK4 stations will send RS plus serial number starting at 001 and incrementing by one for each contact. VK4 stations will send RS, serial number and two-letter shire or town code for purposes of multipliers.

In order to make best use of the band, stations may be contacted once in each hour. Repeat contacts with stations may be counted within the same one hour block ONLY if the station is mobile and crosses from different shires, towns, states or territories to another. All repeat contacts must not be consecutive.

Scoring: One point per contact.

Multipliers: Each VK4 Shire or Town counts as a multiplier only once over the entire duration of the contest. All participants may also count the first contact in each state or territory as a multiplier and these may be counted within each hour block during the contest.

Final Score: The final score is the total QSO points multiplied by the total number of multipliers.

Log Submission: Logs must show full details of all QSOs and must be accompanied by a Summary Sheet showing operator's name; address; callsign; category; claimed score and a declaration that the rules and spirit of the contest were observed. All logs to be submitted by 30 November 2011.

Send logs by mail to:

Jack Files Contest Manager
P.O. Box 250
Ipswich
QLD 4305

Logs may be sent by e-mail in text format to:
vk4wip@gmail.com

Contest Awards: First Overall Winner in VK or any other DX location to be awarded a plaque, in addition to their name being added to a perpetual shield for the contest. This shield will be held perpetually at The Ipswich & District Radio Club Clubhouse.

Second Overall will be awarded a special medallion and certificate.

Third Overall will be awarded a special medallion and certificate.

First in each VK State to be awarded a certificate.

First, second and third overall Foundation licenced operators will be awarded a Special Medallion and certificate.

First Overall ZL will be awarded a special medallion and certificate.

Logging Software: Any logging software may be used, as long as the log includes all of the details required by the rules. VK Contest Log has been updated since last year, is a great logging tool and can be down loaded at *http://web.aanet.com.au/~mnds/index.htm*

Silent Key

John Herbert Ruston ex VK5ARK

It is with deep regret that we report the passing of John Herbert Ruston, formerly VK5ARK, who passed away peacefully in the Renmark Nursing Home on 15 May, 2011 in his 81st year.

John obtained his licence in 1979 and was a foundation member of the Riverland Amateur Radio Club when established in 1989. 'Rusty', as he was known to everyone held an A class Industrial Electricians licence.

John was instrumental in establishing the two metre Riverland VK5RLD repeater, as well as passing on his valuable knowledge to any member wishing to obtain their licence.

John's shack come workshop saw many radios in for repairs as he serviced all the 'Liba Liba' houseboat fleet's UHF radios.

John was involved with the WIA slow Morse practise sessions on a weekly basis, helping novice and other amateurs to upgrade their licence to 10 wpm.

'Rusty' had a great passion for amateur radio but relinquished his licence in 1999 to pursue his other passion, Classic and Vintage cars. He also enjoyed many a day out duck shooting on the Murray River.

John is survived by his wife Joy, son Peter and daughter Anne.

Contributed by Doug VK5GA.

ALARA

Margaret Blight VK3FMAB Publicity Officer

Photo 1: Dianne VKFDIZ – the ice cream girl.

YLs celebrate ALARA'S birthday

It was time to celebrate yet another birthday for ALARA in late July. For those in VK3 it was an opportunity for members of various clubs in Victoria to get together for an enjoyable day. This year we met up in Sunbury where we shared a delicious meal of soup, sandwiches and as many sweets as people could manage. Our host for the day was Jenny VK3WQ, and her OM Peter VK3RV. Some entertainment was provided during the afternoon and a highlight was the appearance of the ice-cream and refreshments girl during the interval.

There were representatives from a number of radio clubs including Macedon Radio Club, Midlands' Radio Club, Gippsland Gate Radio Club and Eastern & Mountain Districts Radio Club.

From VK5 ChristineVK5CTY wrote: *This year there were only seven YLs (and five OMs) to celebrate the ALARA birthday in VK5, as many of the VK5 YLs are scattered over Australia and the world at the moment. We hope they are having a good time. It was very nice to have Somkit and her OM with us this year. Somkit used to be heard regularly on the Monday night nets but her OM had a nasty car accident about 18 months ago which kept both of them busy with hospitals and doctors. Despite the small number it was a very pleasant meal and good company.*

Photo 2: Jean VK3VIP and Jenny VK3WQ cutting the birthday cake.

Sponsorship

ALARA has a sponsorship scheme in place which enables ALARA members to sponsor overseas friends. Many friendships are made this way and when radio conditions are good you may get to speak to your sponsor on air. In fact a number of sponsorships are decided after meeting on air. If you travel overseas, some sponsors can meet you and show you the sights, others may be able to offer accommodation. If/when your sponsor comes to Australia you may be able to do the same. Some of the countries involved in this scheme are: Great Britain, America, New Zealand, Japan, Germany, Greece, Italy, Sweden, South Africa, India and France.

Photo 3: VK5 birthday luncheon attendees were, from L to R: Bea, Shirley, Somkit, Jenny, Tina, Myrna, Jean and Christine.

The ALARA member pays the subscription for a female radio amateur in another country to belong to ALARA and she in turn pays a subscription to the women's radio club in her country. This method saves a lot of money changing hassles. They receive our newsletter and you receive a copy of their newsletter. Many of the DX members being sponsored receive their newsletter by email as it arrives 'hot off the presses' and they can read it the same time as their sponsor.

Some ALARA members have one sponsor and some have several. Many keep in touch regularly while others may only keep in touch on occasions such as Christmas and birthdays. If you are interested in sponsoring a DX YL or being sponsored into an overseas club, contact the Sponsorship Secretary Maria VK5BMT for more information.

I recently heard about a personal sponsorship from an ALARA member which illustrates, once again, how the simple decision to sponsor a female member of an overseas Radio Club can lead to a long term friendship. In this case the member is Robyn VK3WX and this is her story:

Alma Wills ZL1WA and I first met on air in 1989. Alma came up on the ALARA Monday night net, and asked if a YL in Victoria would like to correspond with her, as her son lived near Melbourne. I responded, and we have been friends ever since. Our 'on air' activities over the years have been occasional contacts on the Monday 222 YL net. However, we have also had the luxury of visiting each other's homes many times. Alma stayed with me while visiting her son, and she returned the hospitality when I was coming back from seeing my daughter, who lives in the US. Alma and I attended the wonderful YL 2000, which was organised by WARO in Hamilton. We hired a car and had a ball.

We attended ALARAMEETS together in Castlemaine, Murray Bridge and Mildura. Celia ZL1ALK also stayed at my home on the way to Mildura. In 2004, I was in New Zealand for Alma's 80th birthday. In the past seven years, Alma has called me on the phone every Saturday morning, as she found maintaining her aerials too difficult. She would not let me share the cost. She said it was her treat. During those years, I have sent her mail every week. Recently she has moved from her home to live in a retirement lodge in the same town, and I decided it was time to see her in person. This time we also had a hire car and we had a ball! I really value the special connection Alma and I have. Thank you, ALARA, for making our friendship possible.

Photo 4: Alma ZL1WA and Robyn VK3WX.

Jenny VK3WQ writes: *A week's holiday in Melbourne for a family birthday saw Christine VK5CTY with some spare time on her hands, so it was arranged that she would come and visit Peter VK3RV and I for the day. We picked her up from the train at Sunbury station, which looked as though it was in the process of being demolished, but we are assured that it's called 'Progress' with the electrification of the line taking place!*

First stop was a nearby café for a warming cup of coffee, followed by a quick tour of Sunbury and some of its places of historical interest. Did you know that the very first 'Ashes' cricket match was played at Rupertswood Mansion in Sunbury and that's where the bails were burnt?

Back home, and after the mandatory garden inspection, we were joined for lunch by Pam VK3NK and Graeme VK3NE. Later, John VK3IC also joined us. As Peter and I had recently arrived back from the UK, the conversation naturally revolved around everyone's travel experiences –both highs and lows! Finally we had to break up the party to get Christine back to the station after a pleasant interlude on a cold, wet, Melbourne winter's day.

Thanks for the news Jenny and we hope to hear more about your own overseas trip soon.

What was your State Representative doing at the weekend?

In her never ending search for new ALARA members, Victoria's own State Representative Jean VK3VIP took to the water on a wet and windy day recently. She deserves a medal for stamina.

If readers have any stories of ALARA members going above and beyond the call of duty we would love to hear from you. Look up the ALARA Newsletter and in the committee column is the email address of the publicity officer Margaret VK3FMAB.

Photo 5: Jean VK3VIP at the helm.

Sympathy for Celia Zlialk ZL1ALK

ALARA members extend their sincere sympathy to Celia ZL1ALK that her OM Geoff has become an SK. Celia has been a long term member of ALARA and was a foundation member off WARO. She is well known around the world through her DX activities and we want her to know we are thinking of her at this time.

And finally...The VK5 YLS are now meeting at the Grand Chancellor Hotel in Currie Street on the second Friday of each month, at 12 noon. For the last few months we have only had a small group but now that some of our travelling members are returning the size of the group should increase again. Any YLs visiting Adelaide on or near to the second Friday should contact one of the regulars for further details. We are always happy to have family and friends attend our luncheons. The venue is pleasant, the food is good and the prices are reasonable. Of course the company is great!

Photo 6: Celebrating ALARA Birthday

VHF/UHF - An Expanding World

David Smith VK3HZ
vk3hz@wia.org.au

Weak Signal

It is still only winter and it seems too early yet to call it a new 'season' for VHF/UHF operations, but regardless of that, the bridge from VK to ZL has been crossed already on 2 m – the first for the season!

On August 23rd, at about 0500 Z, Nick ZL1IU reported hearing the VK2RSY Dural 2 m beacon at 559. At 0546 Z, Ross VK2DVZ managed to work Nick over a distance of 2010 km, with a report of 5x2 and only a few brief overs. At 0810 Z, Colin VK2BCC worked Nick with 5x9+ reports. They worked again at 0905 Z with signals down to 5x5.

The Hepburn chart for the day showed medium level Tropo enhancement for the path. It just goes to show that you should keep an eye on the propagation indicators even in the so-called off-season, as you never know what you might be missing.

New microwave records

As reported in the 'Stop Press' last month, Alan VK3XPD and Michael VK3KH have been dabbling in the upper microwave regions, setting new records in the process. Their work has continued as explained by Alan:

On August 21st, Michael VK3KH and myself, Alan VK3XPD set the first VK 122 GHz distance record over a path of 1.51 km in the Melbourne suburb of Cranbourne.

Our signal reports were somewhat generous at 5x1 both ways with fast QSB and even faster frequency drift. Since the transverter design allows for operation on either 78 or 122 GHz by simply changing an oscillator frequency, our first test QSO over 400 metres was on 78 GHz. Once we had confirmed the transverters were working and the dish pointing had been optimised, we then changed the master oscillator frequency on each transverter for our 122 GHz attempt.

Signal Reports for our SSB QSO were an excellent 5x7 both ways for this shorter path. I then relocated and set up the gear for a 1.51 km path. Unlike our previous 76/78 GHz record, this contact was not easy. Despite thinking our dish pointing and the Rx mixer bias were set correctly, we initially could not find any sign of our 122.25015 GHz Signal. However, after a few more tweaks, we finally found our elusive signal with ident way down in the noise. Further optimisation raised it to a workable signal strength.

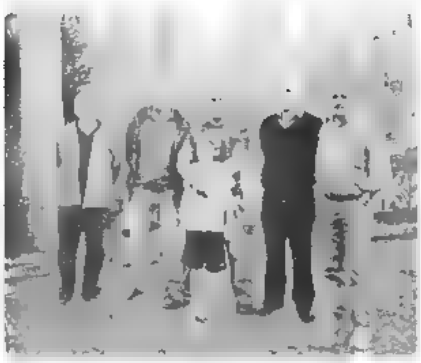


Photo 1: From left Peter VK4APG, Alan VK4WR, Scott VK4CZ, Campbell (junior VK4CZ), Phil VK4FIL and Brian VK5BC.

Both of us have noticed that the pointing of a relatively small 300 mm dish at this frequency is extremely sharp in both planes! Weather conditions were sunny and warm with light winds - nice for amateur radio but not good for 122 GHz propagation due to the rising humidity. The construction techniques used in these transverters is all homebrew – not DB6NT-based.

Alan and Michael then went on to extend their 78 GHz record as Alan describes:

On Monday, 22 August, beginning at 1000 hours EST, Michael and I extended our 78 GHz record twice. The first QSO was conducted over a 2.8 km path along the Berwick-Cranbourne Rd. Signals were 5x6 both ways. We then decided to try and push the limits a bit so Michael drove to a hill on Old Coach Road in Berwick. This is a path of 11.88 km.

Our initial dish pointing (visual) was straightforward and easy but there was no sign of our 78 GHz signal. However, after repeated fiddling with Rx bias and dish pointing we finally found our signal with ident just above the noise floor. After more specific tweaking to optimise the signal, we finally completed with 5x1 reports both ways. With the changing conditions of late morning, Michael later amended his report to 5x2. Having extended this record twice, we then had a bit of a rag chew over our 78 GHz link.

The distances of 1.5 km on 122 GHz and almost 12 km on 78 GHz would seem to be the limit for the current equipment using Melbourne suburban paths. The local Melbourne weather is now heading for the more humid months of summer. To achieve any distance increase in either of the 78 GHz or the 122 GHz records, we will need lower levels of relative humidity. This of course means very early mornings, a trip to the snow or the drier areas of VK - none of which are greatly appealing in the short term. So, for the moment, we will now watch the progress of others.

I will shortly be publishing a technical paper on how we achieved both these records using a simple transverter that does not cost an arm and a leg. The hope is that our recent activities on these bands will inspire a few of you to have a go! I am already looking at the options for 134 GHz - homebrew of course!

For those wanting to find out a little more about the sort of techniques used by Alan in building the transverter, have a look at the following article by Kerry Banke N6IZW: *http://www.ham-radio.com/sbms/sd/47ghzmxr1.pdf*

Of course, signals at these frequencies are extremely hard to measure without very exotic test equipment. Alan has built homebrew harmonic mixers for testing but

'guessestimates' that the transverter is emitting well below 1 mW of power.

The transverter design is based on a sub-harmonic mixer, so the other quest on that is sometimes asked is how do you know which harmonic you are hearing, or indeed if you are hearing the direct IF leakthrough? A an overcomes this by using a local osci lator that is not exactly on frequency. So, as he goes up in frequency (and hence harmonic), the frequency offset also rises. For example, if the (12 GHz range) LO is 10 kHz low, then the IF signal at 78 GHz which uses LO x 6 will be 60 kHz high. The IF signal at 122 GHz which uses LO x 10 will be found 100 kHz high. Note: as explained by Alan, the LO frequency is different for the 78 and 122 contacts.

VK3 Microwave Activity Day – Sunday, 16 October, 2011

With the success in VK3 of the Easter Monday 2.4 GHz activities over the last two years, there has been some interest in organising other days focusing on other microwave bands. So it has been decided that Sunday, 16 October, 2011 will be 1296 MHz morning.

The weather is starting to improve by this time of the year, and it is six weeks before the Spring FD. It is a good opportunity to test your gear out before the field day.

Any operator with 23 cm capability is encouraged and welcome to take part. This band has been chosen because it is the easiest microwave band to access. Whether you operate from home, or take your gear to a high hill somewhere, everyone is welcome.

A number of operators have already indicated their keenness to be involved, and some will be taking other bands as well.

The operational plan will be:

1. Activity will aim to commence at 0830 eastern daylight savings time (2130 Z).
2. The first hour and a half the focus will be on 1296 MHz, than after 10 am activity will progress to other bands
3. 144.150 MHz will be the liaison frequency
4. 1296.150 MHz will be the calling frequency. Operation will focus on SSB.

The organiser, Michael VK3KH, will be operational from Arthur's Seat on the Mornington Peninsula, and would welcome a visit from any operator who would like to come and see microwaves in action. You can contact him via email at: *mdc@cranbournemusic.com.au*

VK4 Microwave Activity Days

The Brisbane VHF Group is proud to announce they will be conducting more microwave activity days.

Sunday, 25 September, 2011 - Microwave 'Tune up day'.

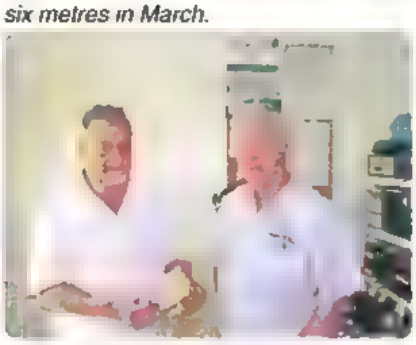
Sunday, 16 October, 2011 - Microwave 'Demonstration day'.

With the warmer weather approaching, operators will start thinking about getting their equipment prepared for the Spring and Summer VHF/UHF Field Days.

You know what usually happens... these field days (and Christmas activities) creep up on you, and it is a mad rush to get things sorted in time. We are seeing an increased interest in microwave activity, with many new participants on the microwave bands, or operators adding extra bands to their existing capabilities. The tune up day will allow microwave enthusiasts to bring their gear along, for comparisons, tests, and tweaks. This will be a great opportunity to test things out, compare, and have time to rectify any issues, before the Spring Field Day.

Apart from putting a face to the callsign, you will be able to see what others have been building, and no doubt bounce some great ideas off one another. Operators interested in becoming active on the microwave band are more than welcome to join in as well, and see what these guys get up to. More details may be found on the VK Logger (www.vklogger.com) in the Forum area in the Brisbane Microwave Activity Days thread.

Photo 2: Wade VK4WM shows Wayne VK4WTN the QSL card he received from UX0UN for his contact with him on six metres in March.



'VHF/UHF – An Expanding World' archive update

For those of you who might want to browse through news of past years, a reminder that the archive of these columns going back to mid-2003 can be found at: *http://www.vk3hz.net/vhf_column/*

Please send any Weak Signal reports to David VK3HZ at *vk3hz@wia.org.au*

Digital DX Modes

Rex Moncur VK7MO

QE29 activation

As part of the international lighthouse weekend activities on 20 and 21 August, Rex VK7MO joined Eric VK7NFI and Wayne VK7NET to add a digital VHF and microwave dimension to the activity. Operations were from Table Cape in north west Tasmania from grid square QE29 and provided the opportunity for many in VK3 to gain this relatively rare grid square. Signals across Bass Strait were sufficiently strong that most contacts were completed on SSB, with 5/9 signals to the Geelong group of Chas VK3PY, Ken VK3AKK, Charlie VK3NX, David VK3QM and Lou VK3ALB on 144, 432,1296 and 10368 MHz.

Digital proved its value with Michael VK3KH at Berwick working Rex at -15 dB on JT65c on 10 GHz with just 200 mW.

Gavin VK3HY worked Rex from Johns Hill lookout at -22 dB on 10 GHz for his first VK7 contact on this band. David VK3HZ noted that Gavin's offset dish seemed to be set to beam too low to the ground and after adjustment upwards by some 10 degrees it was found that signals improved sufficiently to allow an SSB

contact. (Rex has been caught the same way with his offset dish!) David VK3HZ also completed on 10 GHz digital at -6 dB and on SSB at 5/3.

Overall some 60 contacts were made across Bass Strait and many stations can now add QE29 to their grid square totals.

Thanks to Eric VK7NFI and Wayne VK7NET for inviting Rex to take part in their weekend

Portable EME from QE29

Ardent Grid Square chaser Bernd DL9APV worked Rex on 432 MHz JT65b EME at QE29 when the moon was clearly visible early during the Sunday morning and could be tracked manually with Rex's 16 element Yagi. This brings Bernd's total to 485 grid squares on 432 MHz. Bernd is keen to make 500 and he welcomes stations who can work him with a single Yagi and 100 watts. Bernd watches the VK logger for potential contacts and skeds can be arranged with him by email *dl7apv@gmx.de*

Please send any Digital DX Modes reports to Rex VK7MO at *rmoncur@bigpond.net.au*

The Magic Band – 6 m DX

Brian Cleland – VK5BC

After a good winter 'E' season in June and July the band went quiet in August with very few E openings. The openings are summarized below.

1st August John VK2BHO worked Rod ZL3NW.

7th August produces the best E's for August with openings occurring all over VK, ZL and FK8. VK6s reporting VK5 beacons with Graham VK6SIX working David VK5AYD in Coober Pedy. Scott VK4CZ worked Bob ZL1RS and Mark ZL2WHO while Brian VK4IK in Sapphire completed a contact with Remi FK8CP. John VK2BHO also worked ZL1RS and Wayne VK4WTN in Hervey Bay worked Frank VK7DX.

21st August Wade VK4WM in Hervey Bay worked FK8CP.

With the sunspot cycle slowly improving there have been signs of some TEP propagation. Gary VK8AW (ex VK4ABW) in Darwin reports;

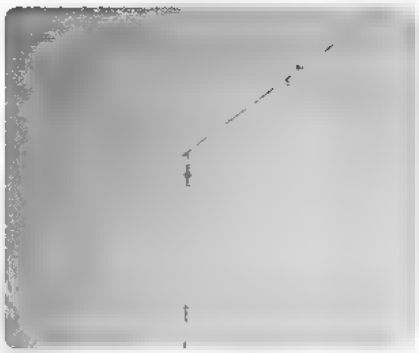


Photo 3: Wayne's VK4WTN seven element YU7EF design Yagi.

The C1 TV has been coming in virtually every afternoon/evening. Sometimes it barely lifts the needle, other times its 20/30 dB over.

On 2 August I worked George DU1GM on 50.110 MHz at 5/3 around 0740 Z, who was the only station to appear that night.

The VR2SIX beacon was 5/1 on the 4th August at 1250 Z and I also heard DU1EV beacon at 5/3 around 1303 Z that night. The 12th August saw lots of beacons coming in from 1200 Z. JA2IGY 5/2, JA6YBR 4/1 and JR6YAG 5/3 for around one hour. The 16th August was a bumper night with the C1 around 20 dB over from 1142 Z and JA2IGY at 5/3, JA6YBR at 5/1 also. Joe KG6DX made it into the log at 20 over on 50.110 MHz at 1200 Z that night. I then had a good chat with Dave KH2/N2NL who was 5/7 and said I was his first VK in a long time. Li BA4SI was 5/5 on 50.110 MHz at 1205 Z and the AH2G/B beacon was switched on at this time too and was S7 here in Darwin.

The 24th August saw my first WSPR contact with JE3AKE on 50.293 MHz with my CP10/6 vertical at nine metres. On 25th August at 1249 Z I spotted the BV2YA beacon 5/2 for the first time in a while. The usual beacons were coming in too, JA6YBR 5/3, JR6YAG 5/5 and Hong Kong VR2SIX 5/1made an appearance at 1300 Z. I spotted BA4SI on 50.110, who was 5/3 but I did not transmit as my WSPR was running on 50.293 MHz at the same time.

On 26th August I had a WSPR contact on 50.293MHz with VK4EK at 0736Z at a distance of 2161 km. Not bad for 10 W to a vertical!

On 26th August Brian VK4EK worked JG2TSL and on the 27th John VK4ZJB in Gympie worked Joel KG6DX.

Brad VK2QO reports that many meteor scatter contacts are being made most morning on 50.200 MHz SSB and 50.230 MHz for digital modes. The group coordinates activity on VKChat and reports contacts on VKLOGGER. Here is a list of up and coming meteor showers for October; the major class1 for this month will be the Orionids and the rest will vary from class 2 to class 4. Showers are: Eta Cetids peak around 3/4 October, Sextantids peak around 4 October, October Cygnids peak around 4/5 October, Arietids peak around 8/9 October, Draconids peak around 9/10 October, Delta Aurigids peak around 9/10 October, Northern Piscids peak around 12/13 October, Epsilon Geminids peak around 18/19 October, Orionids peak around 20-23 October, Leo Minorids peak around 22/23 October. There are many more showers for the month of October but they are mainly in the northern hemisphere. A lot of these showers will peak in the early hours of the morning but should produce some good contacts at the early time of 6 am (5 am in VK4).

I have been travelling Queensland for the last three months, which has given me the opportunity to meet some of the regular VK4 six metre operators including John VK4FNQ in Charters Towers, Wade VK4WM and Wayne VK4WTN in Hervey Bay, Brian VK4EK in Sapphire, Scott VK4CZ, Phil VK4FIL, Allan VK4WR and Peter VK4APG in Brisbane. A special thanks to Scott who arranged for the other Brisbane operators to be at his QTH for drinks and BBQ as well as providing us with a free camping site for the caravan (needed to be able to walk home). The photos were all taken at Scott's VK4CZ QTH.

Please send any six metre information to Brian VK5BC at *briancleland@bigpond.com*

VK2news

Tim Mills VK2ZTM
vk2ztm@wia.org.au

The Oxley Region ARC will have its 40th anniversary lunch on Sunday, 2nd October at the Port Macquarie Golf Club, which is in Ocean Drive at the southern edge of town. The function will commence at noon. There is no charge to attend the lunch, other than to pay for your food and drinks at menu prices. An attractive commemorative certificate will be presented to all radio operators who attend. Bookings are being taken so that certificates can be printed and seating arranged. Check out club details at *www.orarc.org* Visitors and their families will be made very welcome. Updates are given from Oxley in the Club news on VK2WI.

October will also be the final month of special event anniversary callsign VI40BOR. The ORARC club held its well-attended AGM on 6th August. The committee for 2011/2012 has Henry Lundell VK2ZHE as President, Bruce Walker VK2HOT as Vice President, John McLean VK2KC as Secretary and Keith Anderson VK2FKJA is Treasurer. Committee members are David Newey VK2DFN, Arthur Monck VK2ATM and Bill Sinclair VK2ZCV. Life Membership was bestowed on Lewis Green VK2AG, Bob Brodie VK2EJK and Roy Burges VK2YOR. The 2011 Clubman of the Year was awarded to Stuart Melville VK2KSM for an outstanding contribution to the club during the past year.

With JOTA over the weekend of 15th and 16th October many amateurs will be providing their equipment for the event. St George ARS will have a station at Bonna Park Reserve, Kurnell and are looking for persons to assist. Contact their JOTA co-ordinator at *jota@sgars.org*

Fishers Ghost ARC will be operating JOTA for the scouts from the Cataract Scout Park and for the guides at Kentlyn, advises Secretary Wal VK2ZWK.

Blue Mountains ARC conducted their Winterfest at the end of August. Their Wednesday evening two metre net is now half an hour later at 8 pm on 147.050 MHz. A 123 Hz CTCSS tone is required. HADARC have an examination and assessment session for all grades of licence on Saturday 1st October. Contact Tony VK2BTL 02 9487 3383 or the HADARC web site *www.hadarc.org.au* The Great Lakes ARC held their AGM on 29th July with this year's office bearers being Bruce VK2EM as President, Andy VK2AAK as Vice President, Shayne VK2XUV as the Secretary and Ken VK2FKEN as Treasurer. Their club is based on the lower north coast around Forster - Tuncurry.

The Hellenic Amateur Radio Association of Australia – HARAOA – DXpedition to Lord Howe Island in late July made some 17,000 QSOs with 140,000 hits on the website www.vk9hr.com advises President Tommy VK2IR. For the ILLW weekend they activated Montague Island, IOTA OC-223 under the club call VK2CL. A reminder that the judging of the Illawarra ARS crystal set building will be conducted in November. WICEN NSW has the Hawkesbury Canoe Classic operation over the weekend 22nd and 23rd October. As always help is required on the many check points. Their AGM was held early September.

The final two Trash and Treasure Sundays for this year at ARNSW are on the 25th September and 27th November. In the morning, exam assessments are conducted. The VK2WI 3699 kHz Morse training transmission is a constant signal covering much of the globe. Recently John VK2ASU, on a cruise in the Pacific, copied the transmission while off the west coast of the USA. He was using a small SW portable with a short whip. He went up on deck just after dawn and had a respectable signal on the wide band receiver. John considered that if he had had a narrow filter receiver it would have been a solid QRP signal. The 3699 signal is almost 24/7, except for broadcast times and a few other station operations when the 80 metre band is required.

While on the subject of broadcasts it would seem that many weekly broadcasts have left the HF bands in preference for VHF and UHF only transmissions. The VK2WI News Network provides good interstate coverage if the interstate callbacks received are an indication. There may be times when interstate groups require some coverage of a major topic. Our news compilers may be able to fit in a short item or two. Material should be sent to *news@arnsw.org.au* by the Friday prior to the broadcast. VK2WI transmits at 10 am and 7.30 pm VK2 time on Sunday. VK1WIA is part of the morning transmission. The evening is VK2WI news only and includes the ARRL DX news. The text of the weekly VK2WI news can be found on the ARNSW web site www.arnsw.org.au on Monday following the broadcast There are many VK2 clubs and groups that report their major events via VK2WI. We invite other clubs and groups to do likewise. 73.

WIA Contest Website

To keep up to date with all of the major Australian contests, including rules and results, at the WIA Contest Website at:

www.wia.org.au/members/contests/about

Hamads

FOR SALE – VIC

Radio Projects for the Amateur - Volumes 1 - 4 are back in print by popular demand. Practicable plans for the construction of receivers, transmitters, antennas and couplers, test equipment, with lots of workshop notes, prepared by Drew Diamond, VK3XU. Available from the WIA Online bookshop, *www.wia.org.au*

All you need to set up a station at an affordable price and with proven equipment.
Antenna tuner Daiwa, 200 watts P.E.P., crossed needle type, frequency range 3.5 to 30 MHz. Ser No 07304. Going for $75.00. Transceiver, Icom IC-718, 100 watts, fitted with DSP module, covers all HF bands including WARC. Complete with hand held microphone, Icom HM38 and comprehensive manual. Serial No 12216, and priced at $675.00. Power supply, 13.8 VDC 15 A continuous, 17 A on 50% duty cycle. Made by Powertech. Serial No N16511. For sale at $120.00. Two metre HH, Quansheng, with charger and handbook, Serial No 8008070138. For sale, $55.00. Sell complete or will separate, buyer to arrange collection or delivery.
Contact Laurie VK3BV, phone 03 5975 0306 or email *shirlau@netbay.com.au*

Icom model IC-718, 100 W HF transceiver, S/N 0836004, optioned with CR-338 high-stability reference xtal, and FL-52A 500 Hz CW/RTTY filter. Like new, with original box, $890.00.
Icom AH4 auto tuner/coupler to suit, $440.00. Diamond SX-100 power/SWR meter, $150.00.
Drew VK3XU QTHR, Phone 03 9722 1620.

WANTED – VIC

Electronic keyer, for a white stick operator in middle 80's who is a CW buff.
Contact Bill VK3DQS on 03 5941 2899, any hours.

Copies of *Australian CQ* magazine. *See photo at top next column.*
The WIA Archive is seeking early copies of the late 1920s Australian CQ for copying and/or adding to the WIA Archive's shelves.
This magazine was published by the NSW Division of The Australian Radio

Transmitters League, a group which was initially formed in 1927 in Queensland and grew quite large in NSW. Later it established itself to some extent in most Australian States. The magazine possibly ceased publication in late 1929 when ARTL members in NSW re-united with the WIA. The WIA Archive holds only one complete copy and one part copy of this magazine. In addition, a small number of copies are held by ARNSW and the Kurrajong Radio Museum. Collectively, we wish to build up the issues extant
The format was fourteen printed pages stapled, each page approximately 150 mm wide x 220 mm height. A coloured cover was included although the colour seems to have changed with each year of publication.
Please contact Peter VK3RV via email *vk3rv@wia.org.au* or c/o the National Office in Bayswater if you can help us locate this important part of our history.

Copies of the Wireless Institute Gazette.
The WIA Archive is seeking early copies of the Wireless Institute Gazette for copying and/or adding to the WIA Archive's shelves.
Little is currently known about this magazine except that it was published by the NSW Division and possibly started in February, 1926. The WIA Archive holds one copy of the April, 1926 issue. It is marked Volume 1, No. 3. The President at the time was Charles Maclurcan and the Hon. Secretary was W.L. Carter.
The format was eight printed pages stapled; each page approximately 150 mm wide x 220 mm height. There appears to have been no cover.
Please contact Peter VK3RV via email *vk3rv@wia.org.au* or c/o the National Office in Bayswater if you can help us locate this important part of our history.

Wanted. A warm dwelling for a freezing radio. The proud owner of a rack mount, that is, a naked Eddystone 880/2, desires to give it some decent housing to protect it from our current cold nights in Melbourne. Does anyone have a table-top case for this model? I hate to watch it shiver the nights away.
Please contact Mike VK3KRO, QTHR, mobile 0417 358 751, or email *vk3kro@yahoo.com*

FOR SALE – NSW

Yaesu FT-1000, adjustable power up to 200 watts output, with all extras to make it a D model, including band pass filter module, high stability TCXO, 500 Hz and 250 Hz CW filters. Internal automatic antenna tuner with 39 memories. Simultaneous dual frequency reception. 100 memories.
Unit serial number 0L100239. Includes variable rate tuning on both VFOs. Complete with matching SP-5 external speaker and operators manual.
Unit was purchased new, is in excellent condition, one owner. Included, for you to install, is ROM 6.0 firmware update. Pick up from QTH only, asking $2700.00.
Les Baber VK2RJ, QTHR, telephone 02 6543 1942, or email *les_baber@dodo.com.au*

Waverley ARS has a tilt over antenna tower for sale. It is 13 metres tall when raised and has a heavy base plate and base column. It has two winches, one to wind up the telescopic tower and one to tilt it over.
The centre trellis is made in two sections, and will separate. It can be guyed by steel wires and has a ladder built in on the side, but an antenna is easily serviced whilst horizontal and is a one man job.
It can be easily transported on a ute or trailer. It is currently located at Rose Bay in Sydney, ready to transport. Photos of it when last in service can be seen at *vk2bv.org/gallery/2011-auction* The club is asking $400.00 for it. For further details please contact Eric VK2VE on 02 9337 2909, or email *vk2ve@vk2bv.org*

Wanted book title: Electronic Applications of the Smith Chart, by Philip H Smith.
Please call Roderick VK3YC on 0413 074386 or email *vk3yc@wia.org.au*

General Radio AM modulation monitor type GR 1931A, in any condition.
Also, Harris MSP100 Audio Process System or any PCBs for it.

Thanks. Contact John Eggington VK3EGG, phone 03 9752 6184, mobile 0409 234 672, or email *vk3egg@optusnet.com.au*

WANTED – NSW

Yaesu FT-7 transceiver circuit diagram. Contact Malcolm Sinclair VK2BMS, 52 Fourth Ave., Willoughby East. NSW 2068. Telephone 02 9958 1114, or email *vk2bms@bigpond.com*

FOR SALE – SA

The popular VK5JST Antenna Analyser kits are still available through the South Coast Amateur Radio Club. Improve your HF antenna efficiency by building yourself, arguably, the most useful item for your shack. See *www.scarc.org.au* or contact SCARC, PO Box 333, Morphett Vale. SA. 5162. Alternatively email *kits@scarc.org.au*

VK5CQ is downsizing; I have listed some items and will be listing more, in coming weeks, here: *http://GEAR-4-SALE.INFO* Contact Chuck VK5CQ QTHR or at Chuck *VK5CQ@gmail.com*

About Hamads

- Submit by **email (MUCH PREFERRED)** or if written and mailed please print carefully and clearly, use upper AND lower case.
- Deceased estates Hamads will be published in full, even if some items are not radio equipment.
- WIA policy recommends that the serial number of all equipment for sale should be included.
- QTHR means the address is correct in the current WIA Call Book.
- Ordinary Hamads from those who are deemed to be in general electronics retail and wholesale distributive trades should be certified as referring only to private articles not being re-sold for merchandising purposes.
- Commercial advertising on these pages Contact *admanager@wia.org.au*
- Copy to be received by the deadlines on page 1 of each issue of Amateur Radio.
- Separate forms for For Sale and Wanted items. Include name, address STD telephone number and WIA membership number.

'Hamads'
PO Box 2042
BAYSWATER VIC 3153
hamads@wia.org.au

ADVERTISERS INDEX

TRADE PRACTICES ACT
It is impossible for us to ensure that the advertisements submitted for publication comply with the Trade Practices Act 1974. Therefore, advertisers will appreciate the absolute need for themselves to ensure that the provisions of the Act are strictly complied with.

VICTORIAN CONSUMER AFFAIRS ACT
Advertisements with only a PO Box number address cannot be accepted without the addition of the business address of the box-holder or seller of the goods.

Directory

National Office

Unit 20, 11-13 Havelock Road
PO Box 2042 BAYSWATER VIC 3153

Contact 10 am to 4 pm weekdays
Phone **03 9729 0400** Fax **03 9729 7325**
nationaloffice@wia.org.au
http://www.wia.org.au

The Amateur Service
... a radio communications service for the purpose of self training, intercommunication and technical investigation carried out by amateurs, that is, by duly authorised persons interested in radio technique with a personal aim and without any pecuniary interest.
56 ITU Radio Regulations

Advisory Committees

New South Wales/ACT Advisory Committee
Email: *vk2advisory@wia.org.au*
John Bishop VK2BK*
Dominic Dahl VK2YDD
Timothy Mills VK2ZTM / VK2UJ
Gilbert Hughes VK1GH

Victorian Advisory Committee
Email: *vk3advisory@wia.org.au*
Bob Tait VK3XP *
Luke Steele VK3HJ
Noel Ferguson VK3FGN
Chris Chapman VK3QB

Queensland Advisory Committee
Email: *vk4advisory@wia.org.au*
Don Wilschefski VK4BY
Kevin Johnston VK4UH
Michael Charteris VK4QS*
Ken Fuller VK4KF

South Australian Advisory Committee
Email: *vk5advisory@wia.org.au*
David Clegg VK5KC *
Peter Reichelt VK5APR
Ben Broadbent VK5BB
Trevor Quick VK5ATQ

Western Australian Advisory Committee
Email: *vk6advisory@wia.org.au*
Martin Stretton VK6ZMS*
Heath Walder VK6TWO
Craig Lamb VK6FLAM

Tasmanian Advisory Committee
Email: *vk7advisory@wia.org.au*
Clayton Reading VK7ZCR
Justin Giles-Clark VK7TW *
Peter Rumble VK7IY

Northern Territory Advisory Committee
Email: *vk8advisory@wia.org.au*
Peter Blackadder VK8HPB*
Garry Woods VK8GW
Alan Baker VK8AB
Mark Sellers VK8MS

**Denotes nominated by the WIA Board ("Nominated Member")*

Mildura welcomes
Wireless Institute of Australia
2012 Annual Conference
Friday 25 - Sunday 27 May 2012

WIA Annual Conference Mildura 2012

Host Club: The Sunraysia Radio Group

The 2012 WIA Annual Conference will be held in Mildura, Victoria, on Friday 25, Saturday 26 and Sunday 27 May 2012.

The 2012 Conference will be centred on the Mildura Grand Hotel and on Sunday lunch on the Paddleboat Mundoo, with a special Conference station, a special callsign and special QSLs.

Accommodation

The WIA has negotiated a special deal with the Mildura Grand Hotel.

The Grand will offer all participants in the WIA's Annual Conference special rates for accommodation as follows:

Grand Rooms	$140
Grand Executive Rooms	$165
Suite	$200
Grand Suite	$240

These prices are for up to two people per room and includes a cooked breakfast for each person in the Chandelier Room, and are available for as many additional continuous days as required.

The charge for an extra person per room is $30 per person and includes the cooked breakfast. Children under the age of 12 are free of charge.

To book

Make your bookings directly with the Mildura Grand Hotel on either the free call number 1800 034 228 or the hotel's number 03 5023 0511, stating that the booking is for the *WIA Annual Conference 2012*.

We suggest that you request to speak to either Kelly Lang or Ian George when making your booking.

Registration

From 1 October 2011 on-line registration will be available on the WIA website, or you can register by phone to the WIA office.

A registration fee of $75 per person will be charged. That fee will include morning tea, lunch and afternoon tea on Saturday and a tour of the district for partners not participating in the AGM/Open Forum/ Symposium.

Other costs are:

Settlers Club Friday night	$55
Annual Dinner, Saturday night	$50
Paddleboat Mundoo, incl. lunch, Sunday	$50
Sunday night BBQ	$10

When you register we will send you the, Mildura – Sunraysia Tourist Guide, so you can plan what else you will do in the Sunraysia area.

Shortly before the Annual Conference we will send you the Open Forum documents.

Program

Friday 25 May 2012

2 pm to 5 pm	Registration at the Mildura Grand Hotel
6 pm	Buffet Dinner at the historic Settlers Club with Alan Cameron, Mildura businessman, balloon pilot and marriage celebrant "Sunraysia – Past, Present and Future".

Saturday 26 May 2012

8 am to 9 am	Registration at the Mildura Grand.
9 am to 12.45 pm	Annual General Meeting and Open Forum, Mildura Grand Ballroom.
1 pm to 2 pm	Lunch.
2 pm to 5 pm	Symposium (A technical program, details to be announced).
6 pm to 7 pm	Drinks in the Club Lounge.
7 pm	Annual Dinner, Hot and Cold Carvery Buffet, Mildura Grand Ballroom.

A Partners Tour will be available for Saturday, including visits to some of the highlights of the area. The cost of that tour will be included in the registration fee.

Sunday 27 May 2012

11.30 am to 3.30 pm	Cruise and lunch on the Paddleboat Mundoo.
5.30 pm	The Host Club's event – for those staying for Sunday night, a casual BBQ at the home of Noel Ferguson, Fergus Park, Nichols Point (Details at Registration).

Further Information

Watch the WIA website for further information.

The WIA Directors and the Sunraysia Radio Group hope that you will join us in Mildura for our next Annual Conference for what we know will be a memorable weekend.

Experience Icom technology in analogue & digital

ICOM

ICOM A20

To find out more about our latest products, call Icom on 03 9549 7500 or visit www.icom.net.au